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# AVer SD1306

## User Manual

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# Preface

The SD1306 is a 1.3 megapixel outdoor-ready speed dome and offers outstanding HDTV-quality video and 22x zoom. It enables large area surveillance and great details while zooming in. Moreover, SD1306 offers two-way audio communication to facilitate city surveillance and adds security of a micro SD based local backup capacity ensuring that images of events also save locally when the alarm is triggered or the network is down. It's also the best choice for use at airports, train stations and schools.

# Product Specifications

- 1.3M-pixel IP speed dome
- HD Definition (720p) support
- Up to 22X Zoom lens
- 360° Continuous Pan and 170° Tilt
- Digital Wide Dynamic Range
- ICR, adjustable IRIS and shutter time for Day & Night function
- Power over Ethernet (PoE)
- H.264/MJPEG/MPEG-4 compression formats
- microSD/microSDHC card backup (SD card is not included)
- 2-way audio
- IP66-rated
- Weatherproof housing
- Support iPhone/ iPAD/ Android phone and pad
- Free bundled 32CH AVer NXU Lite recording software

## Specifications

| Hardware | |
|---|---|
| CPU | ARM 926EJ |
| RAM | 256MB |
| Flash | 16MB |
| Image Sensor | 1/3” 1.3M Panasonic CMOS sensor |
| Lens Type | 22X optical zoom lens |
| Focal Length | f=4.7~103.4mm |
| F/no | F1.6~F3.1 |
| Pan / Tilt Range | Pan: 360° / Tilt: 10°~170° auto flip |
| Manual Control Speed | Pan: 0.45°~90°/s / Tilt: 0.35°~45°/s |
| Preset Speed | 200°/s |
| Preset Points | 256 |
| Preset Focus Mode | Auto / Manual |
| Patrol | 8 groups |
| Auto Pan | Yes |
| Electronic Shutter | 1/100 ~ 1/10000s |
| Day & Night | Auto / Color / B/W with auto ICR/ Schedule |
| I/O | 2 Sensor in /1 Relay out |
| Audio | G.711 (64K) and G.726 (32K,24K) audio compression<br>Input : 3.5mm phone jack<br>Output : 3.5mm phone jack, or Speaker<br>Support 2-way audio |
| Power over Ethernet | Yes |
| Power Consumption | AC 24V 1A: 11.52W;<br>PoE :802.3at, 12W (Please make sure your PoE switch supports 802.3at instead of 802.3af) |
| Dimensions | $\varphi$ 219mm x 330.7mm |
| Operation Temperature | -20°C ~ 50°C without heater |
| Weight | 3.5kg (without bracket); 4.5kg(with bracket) |

| Network | |
|---|---|
| Ethernet | 10/100 Base-T |
| Network Protocol | IPv6, IPv4, HTTP, HTTPS, SNMP, QoS/DSCP, Access list, RTSP, TCP/IP, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, 3GPP (video only), SAMBA, ONVIF |
| **System** | |
| Video Resolution | 1280x1024@30fps, 1280x960@30fps, 640x480@30fps, 320x240@30fps, 176x144@30fps |
| Video Adjust | AES, Sense Up, Sharpness, D-WDR, Shutter Speed, Sense-Up, AGC…etc. |
| Triple Streaming | Yes |
| Image Snapshot | Yes |
| Full Screen Monitoring | Yes |
| Compression Format | H.264/ JPEG/ MPEG-4 |
| Video Bitrate Adjust | CBR, VBR |
| Motion Detection | Yes, 1 area (whole view) |
| Triggered Action | Mail, FTP, Save to microSD/microSDHC card, Relay, SAMBA |
| Pre/ Post Alarm | Yes (Pre: 5 secs/Post: 5 secs) |
| Security | Password protection, IP address filtering, HTTPS encrypted data transmission, QoS/DSCP |
| Firmware Upgrade | HTTP mode, can be upgraded remotely |
| Simultaneous Connection | Up to 8 |

| MicroSD/SDHC card management | |
|---|---|
| Recording Trigger | Motion Detection, IP Check, Network Status (wired connection only), Schedule, D.I. |
| Video Format | AVI, JPEG |
| Video Playback | Yes |
| Delete Files | Yes |
| **Web browsing requirement** | |
| OS | Windows® XP (32-bit), 7 (32/64-bit)<br>Microsoft® IE 6.0 or above (32-bit only)<br>Notes: Please enable “Compatibility View” while using IE 10 or above. |
| Hardware Suggested | Intel® Dual Core 2.53GHz, RAM: 1024MB, Graphics Card: 128MB |
| Mobil support | iOS 5 or above, Android 1.6 or above. |

***SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.**

# Package Contents

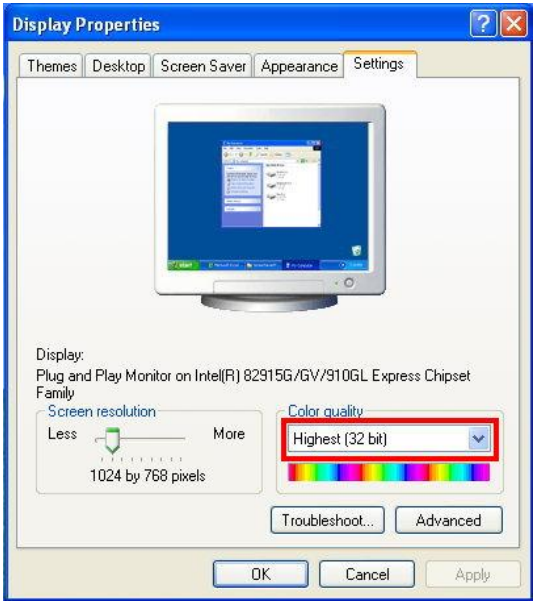
| Item | Descriptions |
|---|---|
| | 1. SD1306 |
| | 2. Wall mount |
| | 3. Power Adaptor (AC 24V/1A) (optional item.) |
| | 4. CD (User's Manual and Quick Guide, NVR software included) |

# Product Installation

## Monitor Setting

1. Right-click on the desktop. Select " **Properties**"

2. Change "Color quality" to "**Highest (32-bit)**".

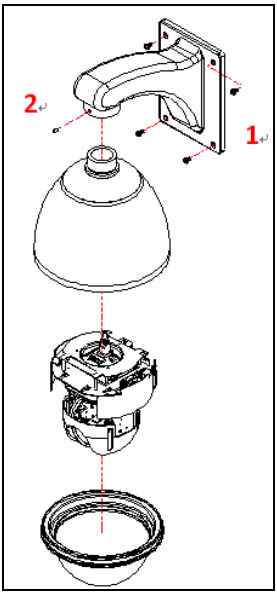


## Hardware Installation and I/O Pin Assignment

1. **Install SD1306 with wall mount**

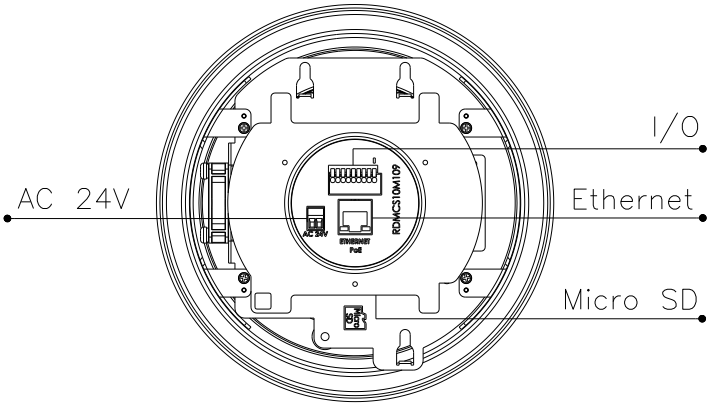
   Step 1: Install the base on the wall.

   Step 2: Install the camera with wall mount pipe.

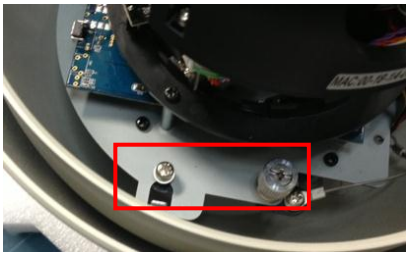


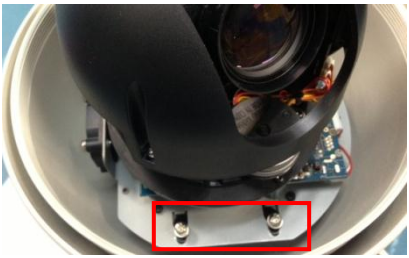

2. **Connector Instruction**

   The camera connectors are as below. Connect the power and the Ethernet cable with the camera, and set it according to your network environment.

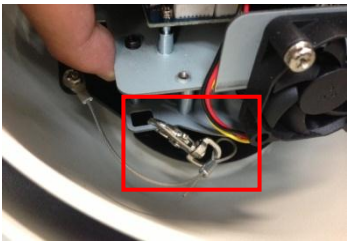


3. Instruction to remove cameral module from camera housing and install cables
   a. Unscrew the screws on the four corners.

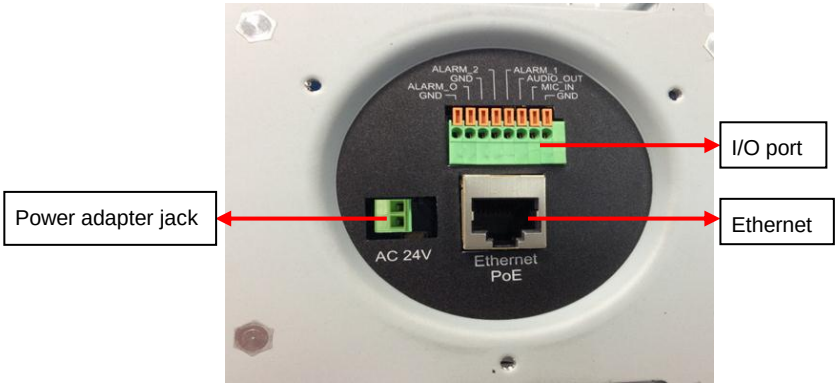




   b. Release the lock to move the whole camera module from the housing

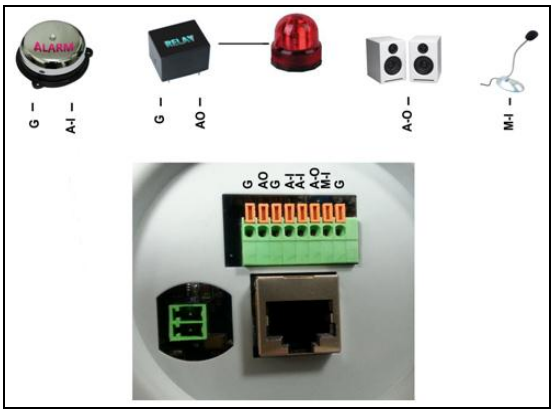


   c. Finally, you can connect the Ethernet cable or DI.DO ports.



4. **I/O Configuration**

■ I/O Connection



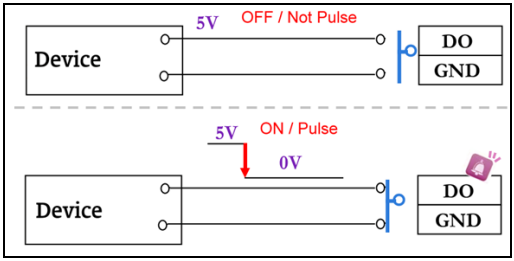

a. Please connect the G & AO pin to the external relay (buzzer) device.

b. Please connect the G & A-I pin to the external trigger device.

c. I/O PIN definition.

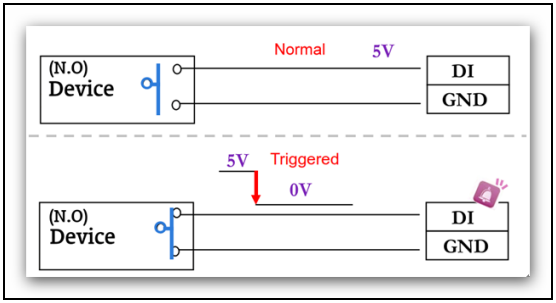
- G (Ground, **GND**)
- AO (Digital Output, **DO**): DC 5V, initial state is High
- A-I (Digital Input, **DI**): Max. 50mA, DC 5V, initial state is High
- A-O Audio Output
- M-I Microphone Input

When no event happens, DO output is 5V (DO and GND are disconnected). When the camera detects event happening and triggers external alarm, DO output is 0V (DO and GND are connected).



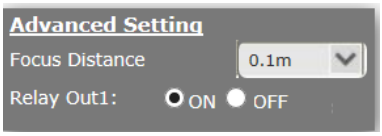

If you select "N.O" in "Input sensor setting", when external device or circuit makes DI and GND pin connected, the camera input alarm is triggered, and then camera will execute the action user has set, for example, send snapshot to E-mail address.

If you select "N.C" in "Input sensor setting", when external device or circuit makes DI and GND pin disconnected, the camera input alarm is triggered, and then camera will execute the action user has set, for example, send snapshot to E-mail address.




■ I/O Set up

Click I/O Setting from the system setup page via IE, and check “ON” on “Out1” to enable I/O signal.

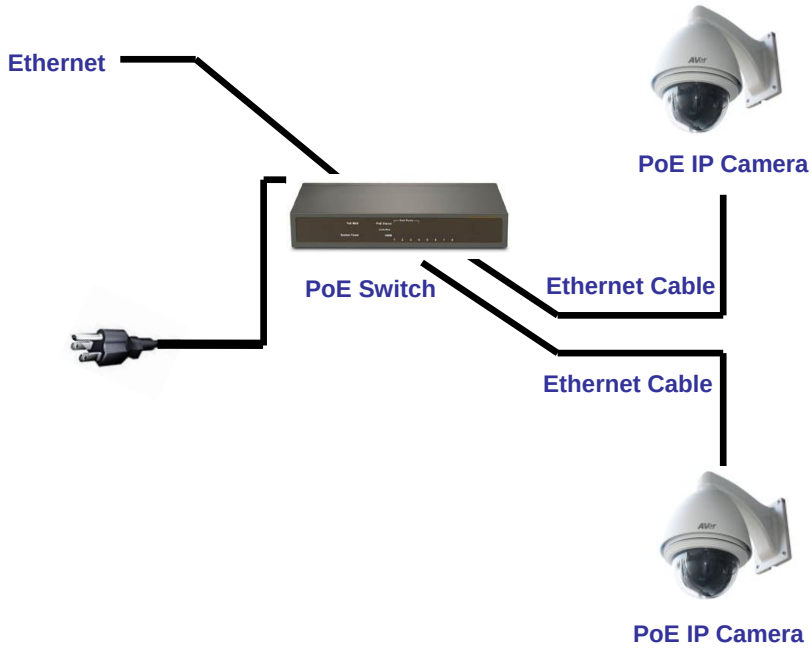


## Power Over Ethernet (PoE)

Set up the IP camera through Power over Ethernet (PoE). PoE is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as an IP camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the camera locations.

**[Note]**

1. 802.3at, 30W PoE Switch is recommended.



## IP Assignment

There are two ways to find IP Camera:

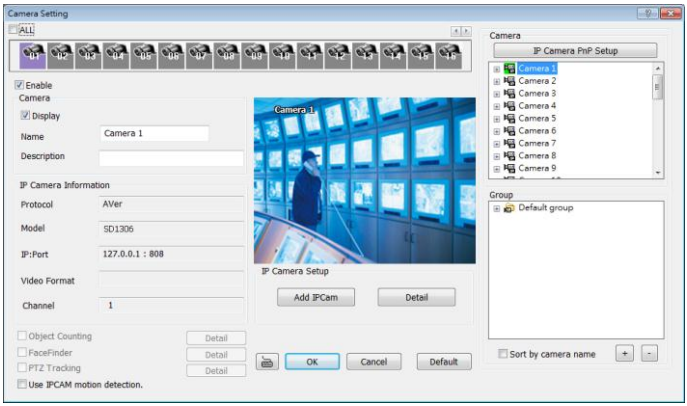
- Finding IP Camera by using the "**NXU Lite recording software**"
- Finding IP Camera by using the "**AVer IPCam Utility**"

### Finding IP Camera by using "NXU Lite recording software"

1. The NXU Lite software is in the attached software CD. Before launching it, please install the software first. During the installing process, users will be required to input a User name and Password for login NXU Lite system. Users can define the User name and Password as wishes. Please refer to NXU Lite user manual for detailed installation instruction.
2. To run the application, double-click on your PC desktop or click **Start** > **Programs** > **DVR** > **NXU Lite**. For security purpose, some of the features would require you to enter User name and Password before it can be accessed. When the Authorization dialog box appears, key in your User ID and Password. (If this is the first time, enter the one you have registered when installing the software.

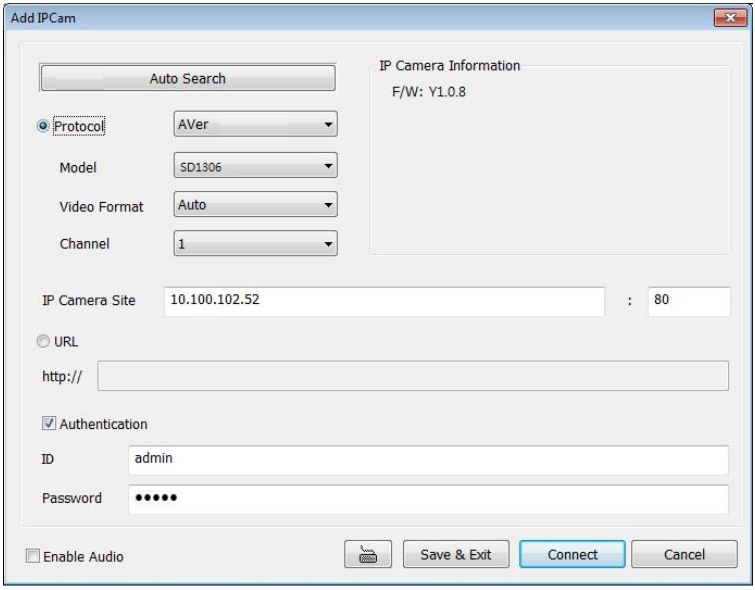
3. Click the “**Setup**” button.

4. Click the “**Add IPCam**” button.

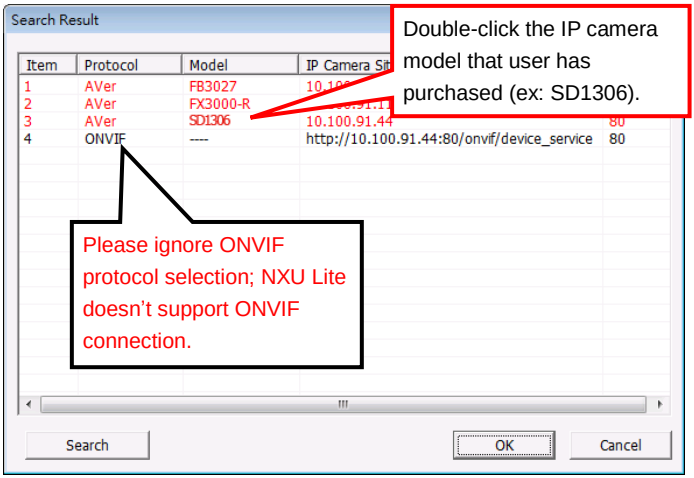



5. Select the “**IP Camera**” item.

6. Enter IP Camera's ID and Password (default is **admin/admin**) and click "**Auto Search**" to find camera.

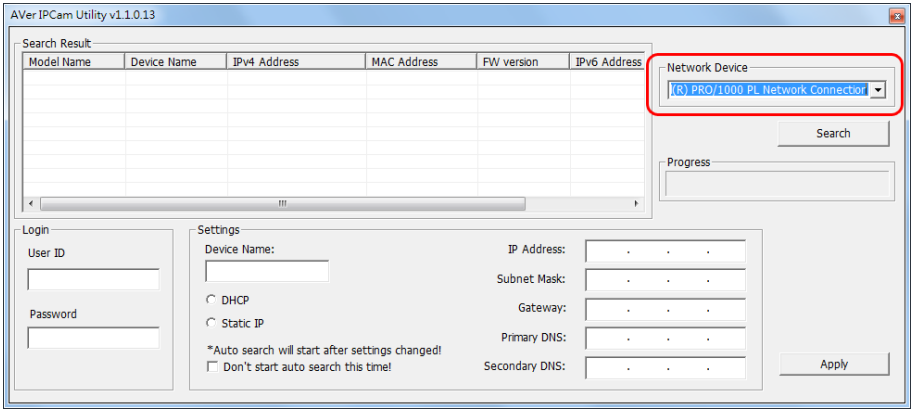



7. In Search Result window, click it the IP camera model that user has purchased (**Please ignore ONVIF connection item**); the camera is in red text that is configurable. User can double-click on the camera in red text and configure the IP camera's setting; even the IP camera is not in the same IP segment. Press "**OK**" to back to previous screen and press"**Connect**" to start live view.

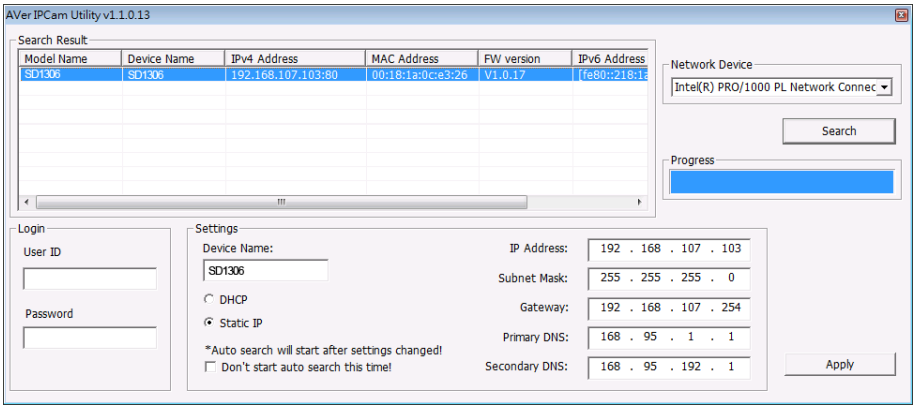


## Finding IP Camera by using “AVer IPCam Utility”

1. Use the software, “**AVer IPCam Utility**” to assign the IP address of the IP camera. The software is in the attached software CD.
2. Run the IPCam Utility
3. Select the proper network adapter and click [Search] to begin searching.




4. Select and double click the IP camera you want to access. If you want to change the setting of the selected IP camera, enter the user ID, correct password, and change the settings and then click **Apply** button. This will change the setting and rescan the network again.



5. The IE browser will open and direct you to IP camera login page. This requires IPViewer.ocx to run. If the IE ActiveX warning message appears, click to allow running the add-on.

Default ID: admin

Default Password: admin

**[Note]**

- The default IP address is: 192.168.1.168
- The default ID and Password are both ”**admin**”.
- You can’t enter a device name in Chinese or any other special characters (' " \ & ^).
- Gateway number can’t be “0”.
- IP camera device name should be less than 30 digits

## Using NON-DHCP Server/Router Network

In Non-DHCP server/router network, the static IP address must be assigned to the device each time when adding another IP camera to the network; the default IP address of the current one must be changed to avoid conflict.

Please make sure the Subnet of the PC's IP address and the IP camera's IP address are the same.

**[Example]**

**The same Subnet:**

IP camera IP address: 192.168.1.168

PC IP address: 192.168.1.100

**Different Subnets:**

IP camera IP address: 192.168.1.168

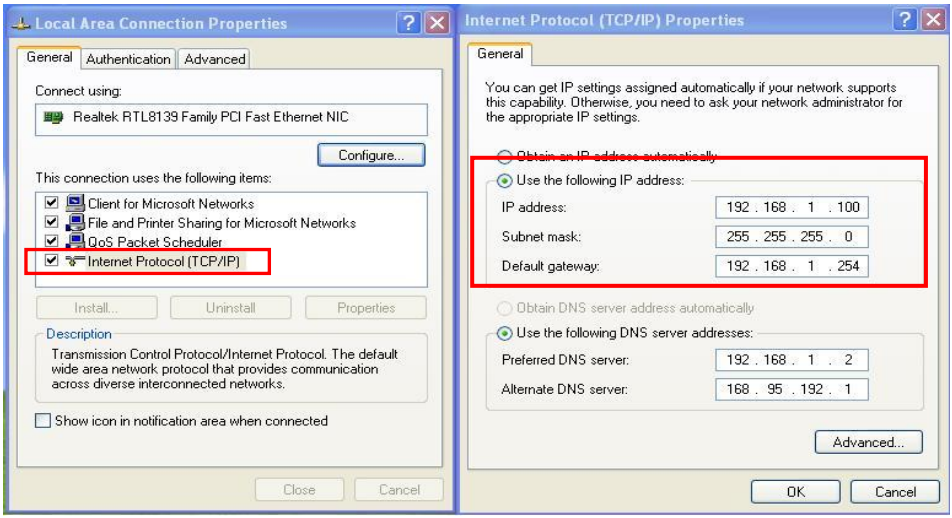
PC IP address: 192.168.2.100

**To Change PC IP Address:**

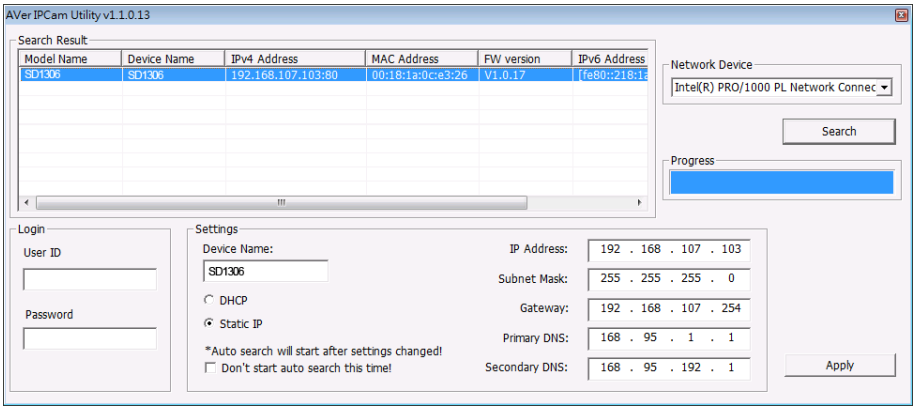
Control Panel → Network Connections → Local Area Connection Properties → Internet Protocol (TCP/IP) → Properties

Please make sure your IP camera and PC have the same Subnet. If not, please change IP camera subnet or PC IP subnet accordingly.

**PC's IP address:**


Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Realtek RTL8139 Family PCI Fast Ethernet NIC
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Close
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Use the following IP address:
IP address: 192 . 168 . 1 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 2
Alternate DNS server: 168 . 95 . 192 . 1
Advanced...
OK
Cancel

**IP camera IP addresses:**




A quick way to access remote monitoring is to double-click on a selected IP camera in "Camera Name list" in AVer IPCam Utility. Then, the IE browser will open and connect to IP camera.

Then, please key in the default "**ID**" and "**Password**", both of which are "**admin**".

**[Note]** Please enable "Compatibility View" while using IE 10 or above.

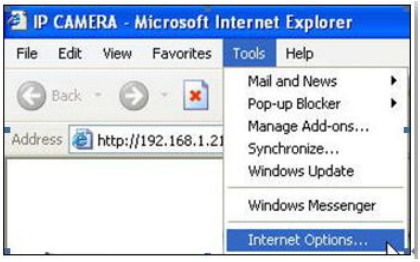
## Install ActiveX Control

The first time you attempt to view the camera video via Internet Explorer, it will ask you to install the ActiveX component.

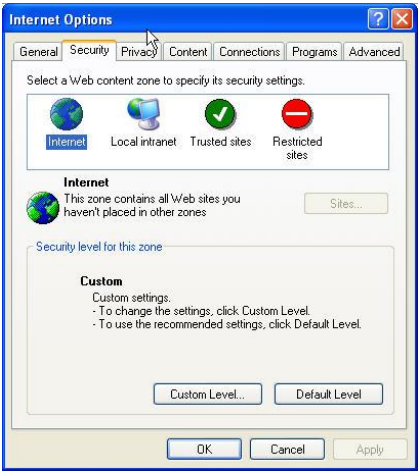
If the installation fails, please check the security settings for the Internet Explorer browser.

1. IE → Tools → Internet Options… → Security Tab → Custom Level… → Security Settings → Download unsigned ActiveX controls→ Select "**Enable**" or Prompt.
2. IE → Tools → Internet Options… → Security Tab → Custom Level… →Initialize and script ActiveX controls not marked as safe → Select "Enable" or Prompt.

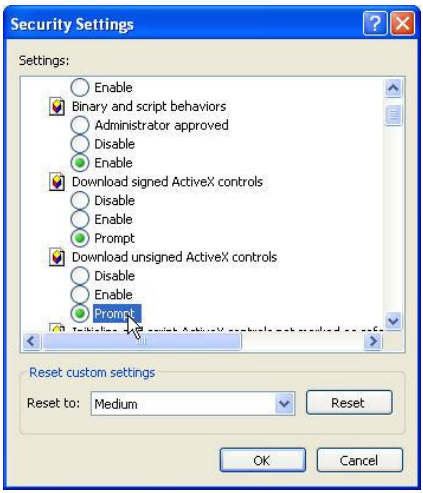
**1**



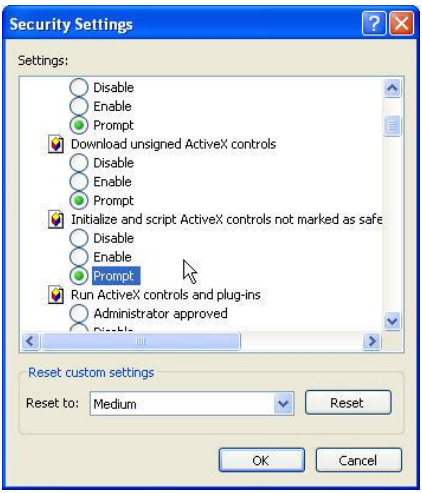

**2**




**3**




**4**



**5**

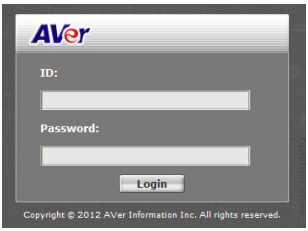
When the following dialogue box appears, click “**Yes**”.

# Using the IP Camera Browser Interface

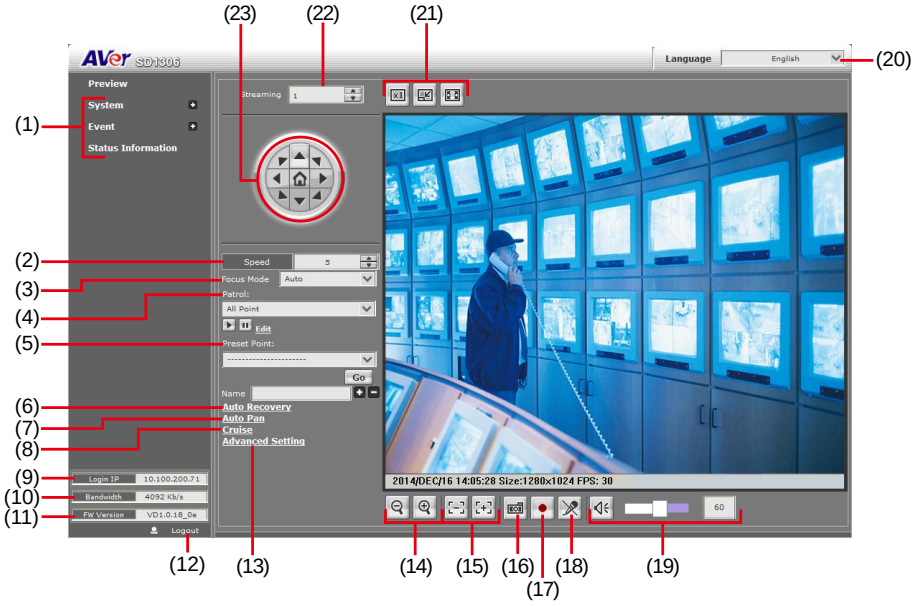
The admin have the full access to the IP camera browser interface. The menu on the left, you can expand and navigate to access all the features.

## Preview

Launch the Internet Explorer browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the"**ID**" and "**Password**". The default "**ID**" and "**Password**" are both "**admin**".




Once connected to the IP camera, the following program interface will appear.




| Name | Function |
|---|---|
| (1) System/Event/Status Information | Set up IP camera's configuration. |

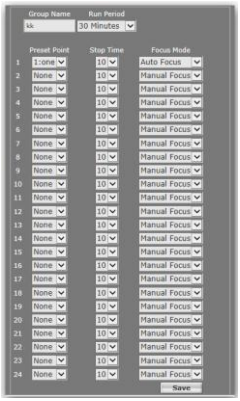
| Name | Function |
|---|---|
| (2) Speed | To adjust the movement range from number 1~9. The larger number you choose, the bigger movement range you get. |
| (3) Focus Mode | When you use direction controller to move the camera position, you can select focus mode in manual or auto. |
| (4) Patrol | Build a group to do patrol function. See below for detail setting. |
| (5) Preset point | Set the view angle. See below for detail setting. |
| (6) Auto Recovery | For setting the position of the IP camera after recovery. (In case there is no setting for “Pan” and “Patrol”. |
| (7) Auto pan | Auto-pan function allows the camera to patrol between two preset points. See below for detail setting. |
| (8) Cruise | Allows user to record PTZ movement (ex: zooming, focus, speed, direction…etc.) which can be playback right after. See below for detail setting. |
| (9) Login IP | Show PC’s IP address |
| (10) Bandwidth | Show current IP camera’s transmitting bandwidth |
| (11) FW version | Show IP camera’s current firmware version |
| (12) Logout | Exit the application |
| (13) Advanced setting | To set Home Position, Focus distance, PTZ control and Relay out functions. See below for detail setting. |
| (14) Zoom control | Increase optical zoom level. (Max.22X)<br> Decrease optical zoom level. |
| (15) Focus button | Manually adjust the focus |
| (16) Capture | Capture and save the image on the screen in *.bmp format |
| (17) Record | Start/stop audio and video recording. The recorded video will be saved in *.avi format. |
| (18) 2-way audio | Click the Microphone button to talk to IP camera side from user site. Click this button again to mute this function. |

| Name | Function |
|---|---|
| (19) Speaker | Turn on the PC's speaker so that PC side can hear sound from IP camera side. Click this button again to mute this function.<br> Use the scroll bar to adjust the speaker volume.<br> It shows the current speaker volume's value. |
| (20) Language | Select the browser interface language. |
| (21) Video screen | Change the video screen display.<br> Display the actual video pixel size<br> Display the video screen in compact size.<br> Display the video in full screen mode. Press ESC to exit full screen mode. |
| (22) Stream | Switch to view the video stream type. The IP camera can send multiple video streams of up to 3 types. To change the video stream setting, go to System > Video Stream.<br>**[Note]** When stream 2 setting in "**Video Setting**" is closed, there won't have other stream option |
| (23) Direction controller | Move the position of the view point while in zoom mode. User has to zoom in first. |

## Setting preset points

1. After clicking on "**Preset Point**", use the 8-direction arrows, zoom, and focus function to shift the camera view.
2. After you adjust the camera view to where you want to set a preset point, select a number from "Preset Point" drop-down menu, key in a name as you like in "**Name**" column, and click "**+**" button.
3. If you succeed, the point name you set will be added to the point list.
4. When you select that point from the drop-down menu and click "**Go**", the camera view will move to where you had set.

## Setting a patrol group




1. (After clicking on “Patrol”). To build a new group, select a number from "**Patrol**" drop-down list, and click "**Edit**". You can customize up to 8 groups.
2. Give the group name, and select how long the patrol lasts. If you select "**Always**", the camera will keep patrol until someone stop it manually.
3. For each number in the list, select a preset point, the interval stopped on that point and auto focus/ manual focus. If you select manual focus, remember to adjust the focus to clear when you set up that preset point.
4. After completing the setting, click "Save" and close the patrol group setting page. If you succeed, the group name you set will be added to the patrol list.
5. To start patrol, select one group from the list, and press . The camera will move according to the patrol route and dwell time you had set. If you select "All Point", the camera will go every preset point in sequence.
6. To edit a patrol group, select it from drop-down list and click "**Edit**". To delete a patrol group, select it from drop-down list and press “**−**“

   **[Note]** Group name has to be less than 31 digits.

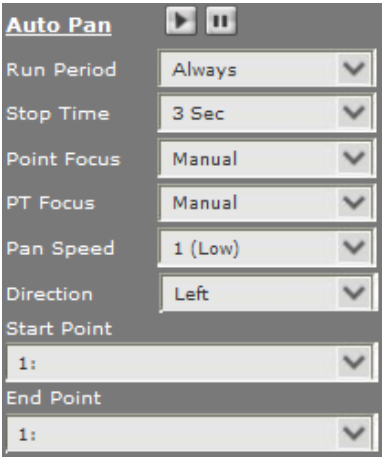
## Setting Auto Pan

Auto Pan function allows the camera to patrol between two preset points. After clicking on “Auto Pan”

Select the start and end preset points from drop-down list.

Select how long Auto Pan lasts. If you select "Always", the camera will keep auto-pan until stops it manually.

Select stop time, point focus, PT focus, pan speed, and direction. If you select manual focus, remember to adjust the focus to clear when you set up the preset point. If you select auto focus, we advise to set the stop time longer because the camera needs some seconds to focus.

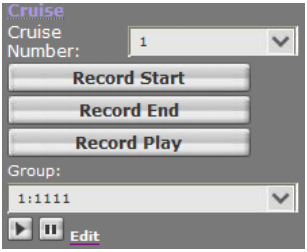



Press to start auto-pan. Press to pause.

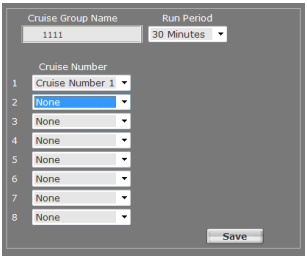
**[Note]**

1. Point Focus: Focus on a point – auto or manual.
2. PT Focus: Focus on the path that is between point to point – auto or manual.

## Cruise setting



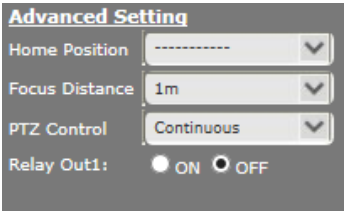

- **Number:** Setting a cruise number: Create up to 8 types of different movements (speed, Zoom, focus, direction) assigned with 8 numbers. For example, when you click on Record Start under cruise number 1, the movement pattern you create will be assigned to number 1. Same method applies to other numbers.
- **Group:** Build a group to do cruise function.
  - ✓ **Setting a Cruise group**




1. To build a new group, select a number from "**Group**" drop-down list, and click "**Edit**". You can customize up to 3 groups.
2. Give the group name, and select how long the cruise run period. If you select "**Always**", the camera will keep cruise until someone stop it manually.
   **[Note]** Group name has to be less than 31 digits.
3. For each number in the list, select the cruise number and click "**Save**". If you succeed, the group name you set will be added to the patrol list.
4. To start cruise group, select one group from the list, and press . The camera will move base on the cruise route.

## Advanced setting

- **Home Position:** For setting the home position of the IP Camera.
- **Focus Distance:** The longer the distance is between the camera and the shot object, the longer distance you should need. IPCAM cannot focus on the object nearer than focus distance. If you select "3M" for focus distance, the image of those objects at 1M may not be clear.
- **PTZ Control:** Under "Continuous" mode, when controlling the 4-direction arrows, users can press and hold the button to let the camera lens move continuously. Under "Step by step" mode, when controlling the 4-direction arrows, users can make a click on button to let the camera lens move one step.
- **Relay Out 1:** Tick the Relay out "ON" box to trigger the relay output for testing. Tick "**Off**" to stop triggering.

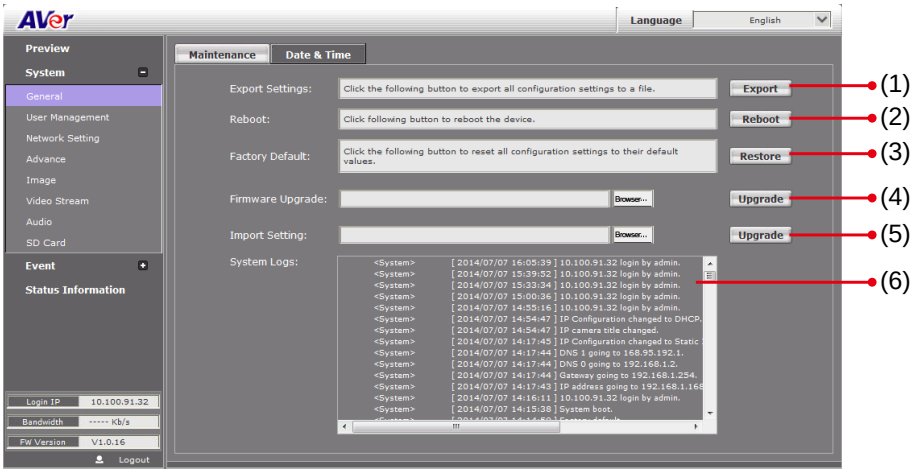


## System > General

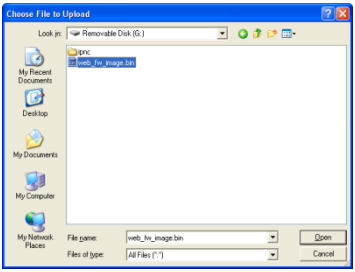
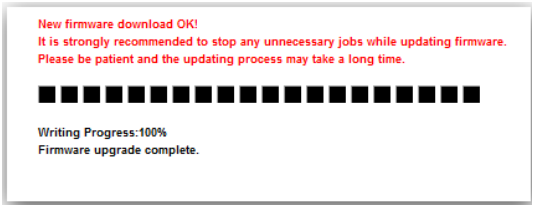
In this section, only admin level is authorized to configure the IP camera system maintenance and the date and time settings.

## System > General > Maintenance

In the Maintenance tab, the administrator can check the system event log, upgrade the system firmware, reset the configuration settings without having to change the user management and network settings, reboot, and restore all back to factory default settings.

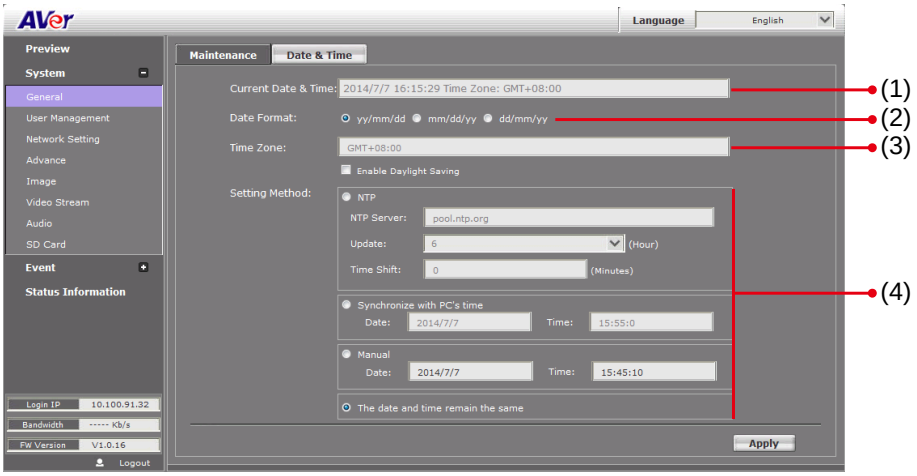


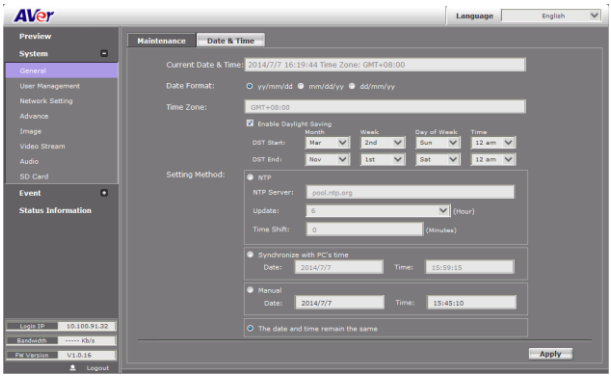

| Name | Function |
|---|---|
| (1) Export settings | Upload to save all the configuration settings from the IP camera to computer hard disk. |
| (2) Reboot | Turn the IP camera off and on again. |
| (3) Factory default | Set all the configuration settings back to default except the user management and network settings. |

| Name | Function |
|---|---|
| (4) Firmware upgrade | Upgrade the firmware to the latest version.<br><br>**To Upgrade the IP Camera Firmware**<br><br>1. Download the file from our website and save it in your computer hard disk.<br>2. Click Browse. Locate and select the file and click Open.<br>3. Click Apply. Wait till you see the massage "Firmware Upgrade OK!!". You may now click the Internet Explorer browser refresh button or press F5. The login page will appear.<br><br>  <br><br><br>  <br> |
| (5) Import | Download to replace the current settings with the configuration settings file from the computer hard disk to IP camera. |
| (6) System log | Display the IP camera system event log. |

## System > General > Date & Time

In the **"**Date & Time**"** tab, **the** admini**strator** can set and update the system**'s** date and time. After **filling in** the **correct** setting**s**, click **Apply** to apply the new settings.




| Name | Function |
|---|---|
| (1) Current Date & Time | Display the current date and time. |
| (2) Date Format | Select the date display format. |
| (3) Time Zone | Set the local time zone. Check the box next to "Enable Daylight Saving" to enable and setup the start date and end date for daylight saving time.  |

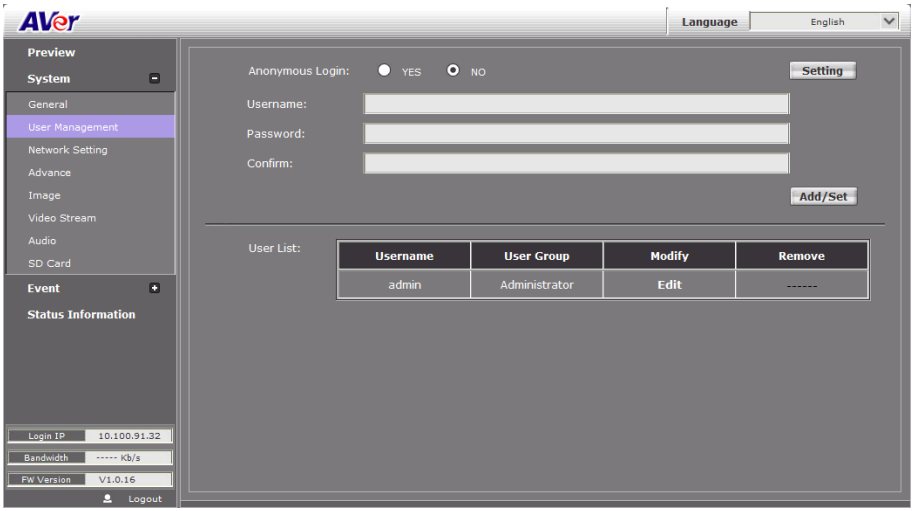
| Name | Function |
|---|---|
| (4) Setting Method | Select the date & time settings method.<br>**Sync with current PC** – Obtain the date and time setting on the current login computer.<br>**Sync with NTP Server** – Obtain the date and time setting from NTP server. In the drop-down list, select the NTP host name.<br>**Manual** – Manually set the date and time. Click "**Done**" to close the date and time interface. |

## System > User Management

In this section, only admin level is authorized to create, delete, and edit the account in Account tab and configure the client connection setting in Connection tab.

## System > User Management

IP camera supports two different user accounts – Administrator (Admin) and Guest User.




| User Type | Access Rights |
|---|---|
| Admin | Can access all the configuration pages |
| Guest User | Can only access the preview and status information pages. |

- **Anonymous User Login**
  - ✓ **Yes:** Allow an anonymous user to view the IP camera without logging in.
  - ✓ **No:** Need user name & password to access this IP camera

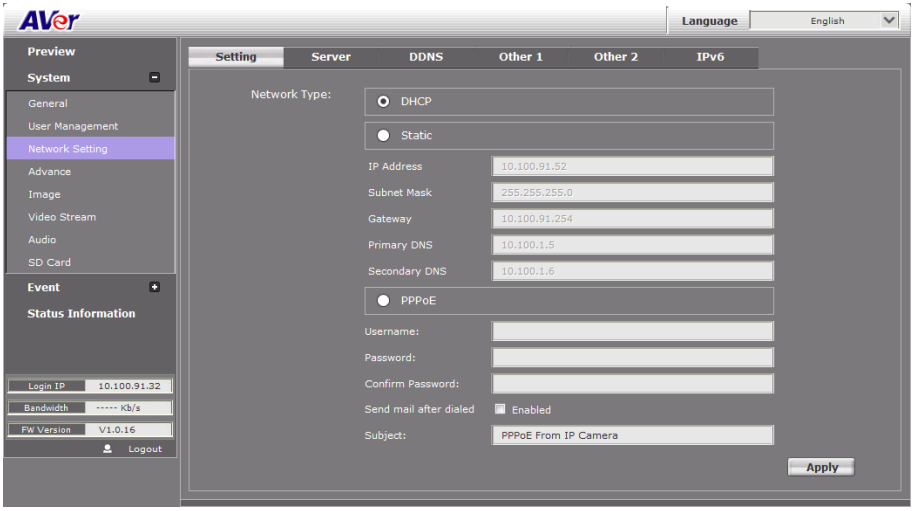
- **Add user:** Enter the user name in “**Username**”, the password in “**Password**”, and re-enter the password in “**Confirm**”. Then, click “**Add/Set**”.
- **User List:** Click **edit** to change the account password. To delete the user account, click **Remove** button.

**[Note]**

1. The password can’t be empty, otherwise, user are not able to login successfully.
2. Please don’t use special symbols as user name such as *, %, $, &.

## System > Network Setting > Setting

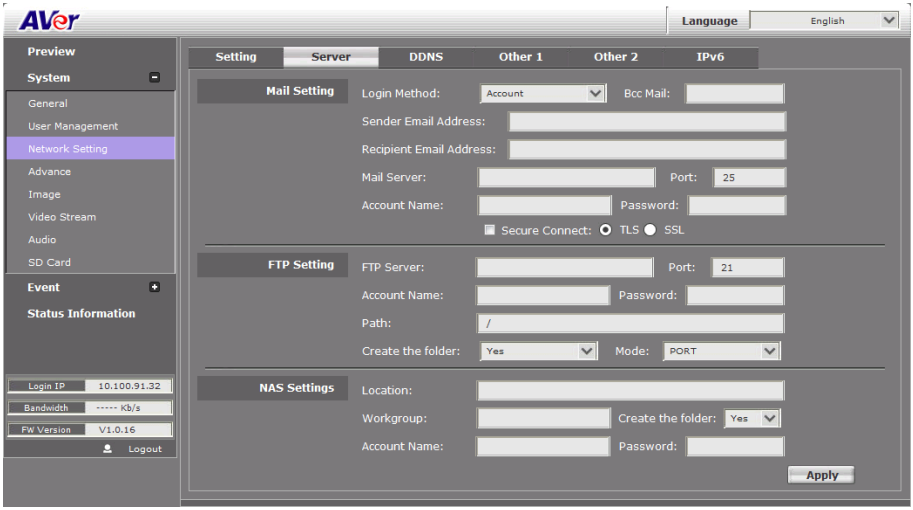
- **Device Name:** Used to name the IP camera to search more easily for this specific one among all connected IP cameras.




- **Network Type:** IP camera supports DHCP, static IP and PPPoE. After completed all settings, click **Apply** to save the configuration.
  - **DHCP:** Using DHCP, IP camera will get all the network parameters from DHCP server automatically.
  - **Static IP:** Please enter the IP address, subnet mask, gateway, Primary DNS, and Secondary DNS.
  - **PPPoE:** Enter the **Username**, **Password** and re-enter Password in **Confirm Password** for the ADSL connection. And then click **Apply** to save the configuration.

## System > Network Setting > Sever

To send out the video via Email or FTP, or to save on NAS.

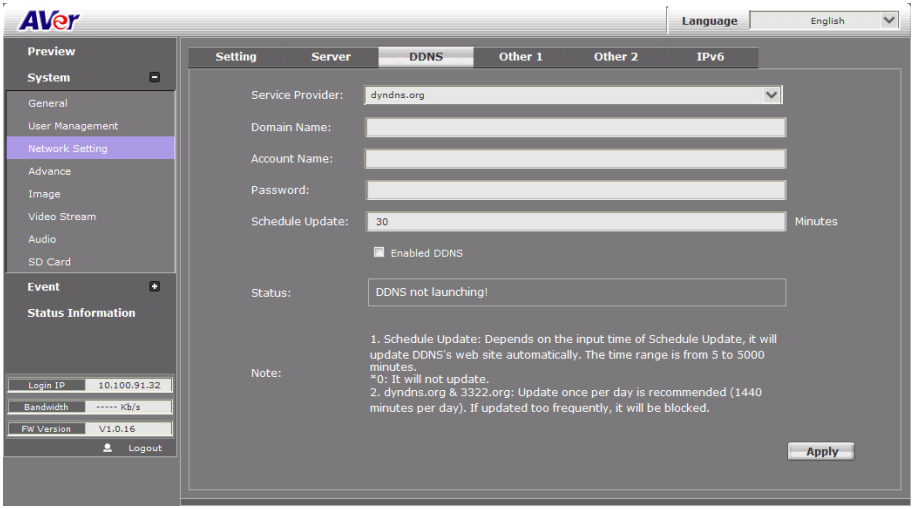



- **Mail Setting:** Used to send out the video via Email.
  a. **Login Method:** Click drop-down list to select the method to login Email server – "**Account**" or "**Anonymous**".
  b. Enter necessary information in "**Bcc Mail**", "**Sender Email Address**", "**Recipient Email Address**", "**Mail Server**", "**Mail Server Port**", "**Account Name**", and "**Password**" columns.
  c. Click "**Apply**" to save the configuration.
- **FTP Setting:** Used to send out the video to FTP server.
  a. Enter necessary information in "**FTP Server**", "**Account Name**", "**Password**", and "**Path**" columns.
  b. **Port:** Select the FTP server port.
  c. If the user wants to create a new folder on the FTP server to save the video file, select "**Yes**" under the "**Create the folder**".
  d. **Mode**: Select the FTP transmission mode.
  e. Click "**Apply**" to save the configuration.

- **NAS Settings:** Used to send out the video to NAS server.
  a. Enter necessary information in "**Location**", "**Workgroup**", "**Account Name**" and "**Password**" columns.
  b. If the user wants to create a new folder on the NAS server to save the video file, select "**Yes**" under the "**Create the folder**".
  c. Click "**Apply**" to save the configuration.

## System > Network Setting > DDNS

The IP camera supports DDNS (Dynamic DNS) service.




a. Select "**Enabled DDNS**" to enable DDNS function.
b. Enter the **Domain Name**, **Account Name**, and **Password** that the user has registered on the DDNS service provider in the appropriate columns.
c. Enter the IP refreshing time period in the "**Schedule Update**" column.
d. Click "**Apply**" to save the configuration.

**[Note]** If you set up schedule update to occur too frequently, the IP may be blocked. In general, performing schedule update once a day (1440 minutes) is recommended.

■ **Status**

- **Common warning message:**

  Updating!
  Failed(1), please check your DNS setting.
  Failed(2), please check your internet connection.
  Failed(3), please check your internet connection.
  Failed(6), receiving data failure

- **Warning message from different service provider:**

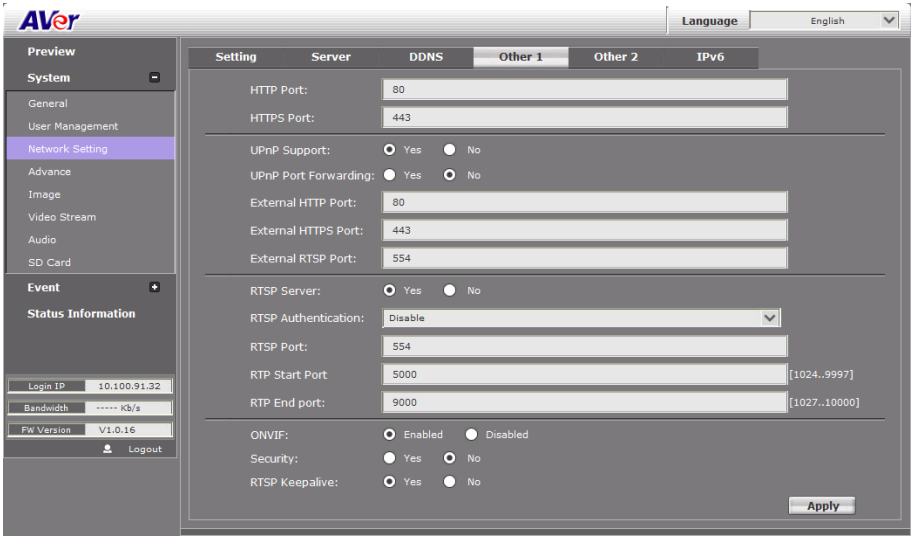
  ✧ **Server Provider : dyndns.org**
  Failed(4),please check the Dyndns.org.
  Error : The system parameter given is not valid.
  Error : No user agent was specified.
  Error : The username and password pair do not match a real user.
  Error : An option available only to credited users was specified.
  Error : Not in the form hostname.domain.org or domain.com.
  Error : The hostname specified does not exist.
  Error : Not under the username specified.
  Error : Too many or no hosts specified in an update.
  Error : The hostname specified is blocked for update abuse.
  Error : DNS error encountered.
  Error : DNS Server Error Conditions.

  ✧ **Server Provider : ddns.camddns.com(TW)**
  Failed(5), The name has already been registered.

  ✧ **Server provider : ddns.ipddn.com(HK)**
  Failed(5), The name has already been registered

  ✧ **Server provider : www.3322.org.**
  Failed(4), Please check the www.3322.org.

## System > Network Setting > Other 1




User may need to assign different port to avoid conflict when setting up IP assignment. Click **Apply** to save the configuration.

- **HTTP Port:** setup web page connecting port and video transmitting port (default: 80)
- **HTTPS Port:** AVer IP Camera supports encrypted browsing using HTTPS. This is configured on the System > Advance > HTTPS
- **UPnP Support:** This IP camera supports UPnP, if this service is enabled on your computer, the camera will automatically be detected and a new icon will be added to “My Network Places.”

**[Note]** UPnP must be enabled on your PC.

Please follow the procedure to activate UPnP.

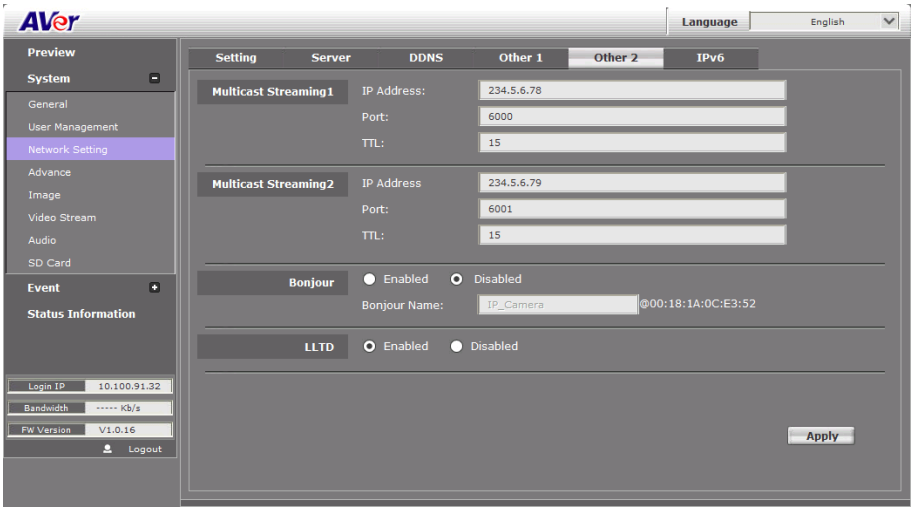
1. Open the **Control Panel** from the Start Menu.
2. Select **Add/Remove Programs**.
3. Select Add/Remove Windows Components and open Networking Services section.
4. Click **Details** and select **UPnP** to setup the service.
5. The IP device icon will be added to “**My Network Places**”.
6. User may double click the IP device icon to access IE browser.

- **UPnP Port Forwarding:** If the IP camera is set up behind the firewall, please select YES to enable it.
- **RTSP Server:** Enable/disable RTSP function. The Real Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

- **RTSP Authentication:** Select the RTSP authentication mode – disable, basic, or digest.
- **RTSP Port:** setup port for RTSP transmitting (default: 554)
- **RTP Start and End Port:** in RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port (554). UDP connection uses RTP Start and End Port.
- **ONVIF:** User can enable ONVIF standard and select the ONVIF version or disable it.
- **Security: Yes** is required account and password to connect with this IP camera through ONVIF protocol. **No** is not required account and password to connect.
- **RTSP Keepalive:** To keep connected until remote site disconnects it.

## System > Network Setting > Other 2

Multicast Setting (based on the RTSP Server): User can setup two streaming based on the RTSP Server.



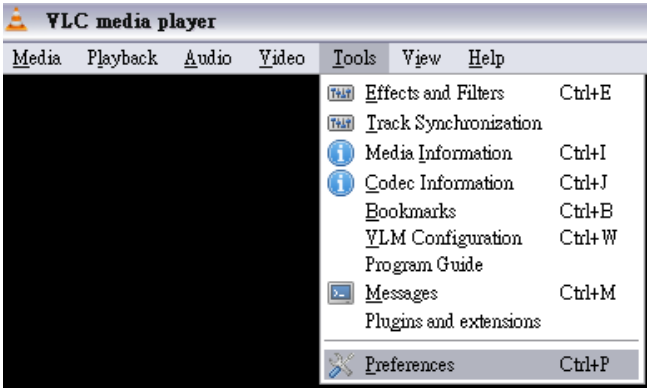

**Multicast operation example:**

The application is to get the multicast streaming in the LAN environment. Basically, the users operate VLC player, and then you can get the multicast streaming form IP camera.

Please follow the steps to obtain the multicast streaming in the following steps:

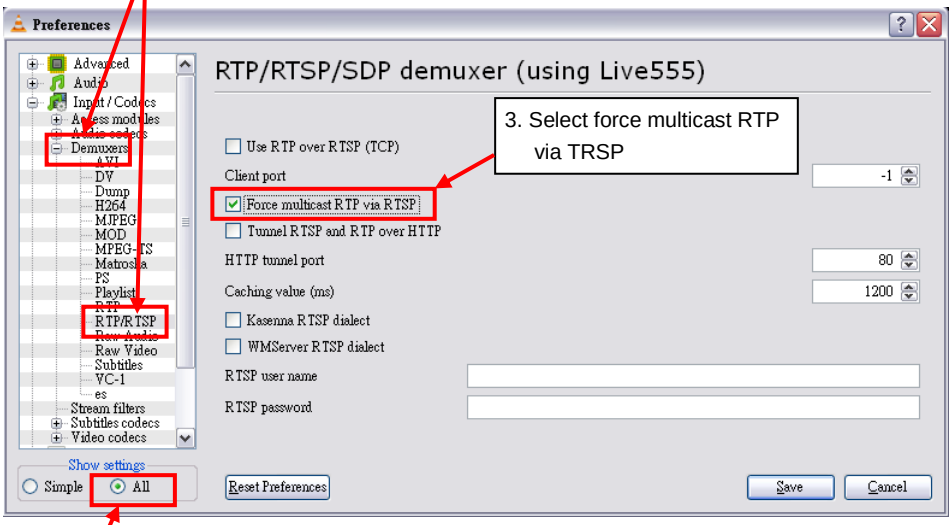
***Step 1:***

1. Implement VLC player (please download from the internet)
2. Select /tools/preferences



***Step 2:***

2. Select Demuxers and RTP/RTSP

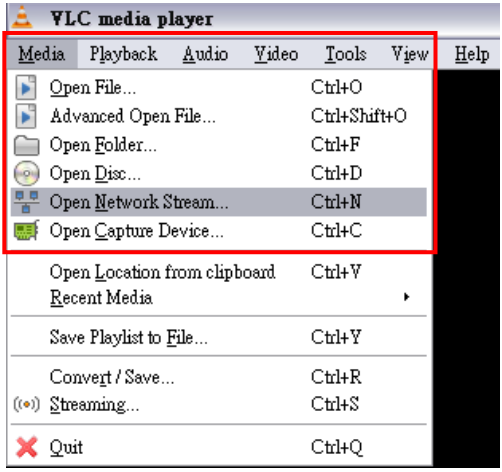



3. Select force multicast RTP via TRSP

**1. Select all**

***Step 3:***

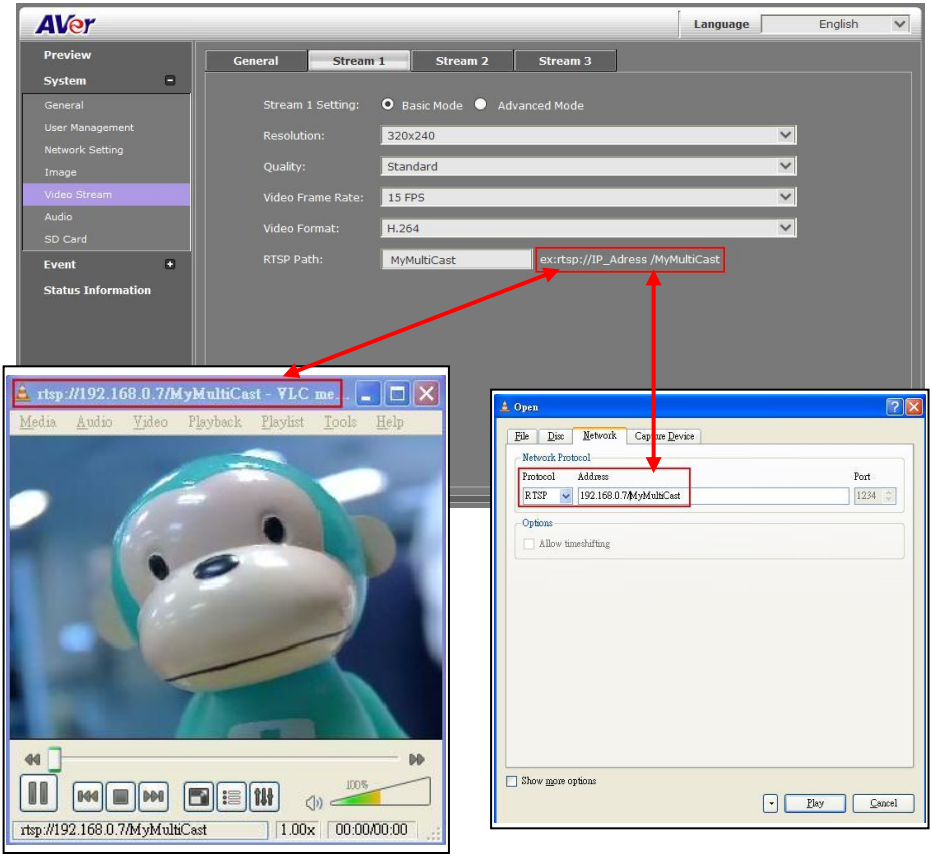
Select Media/open network stream



***Step 4:***

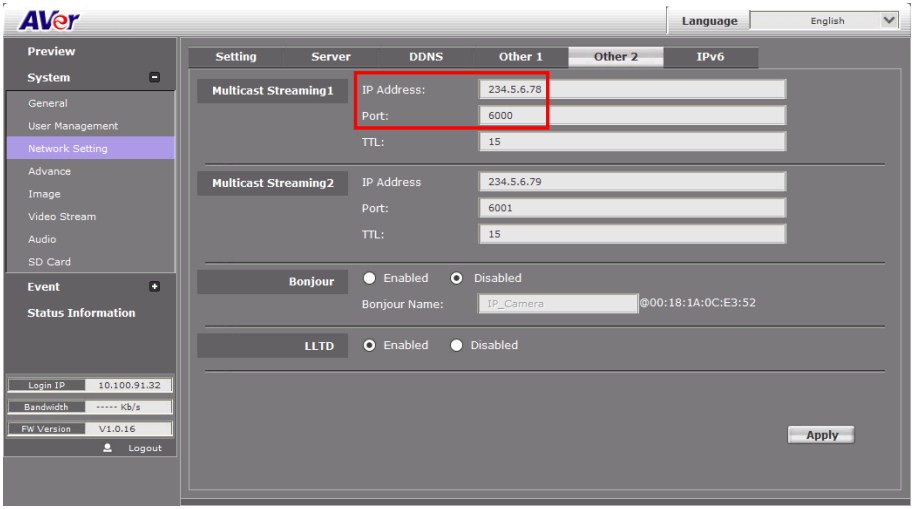
Input **rtsp://[IPCAM Address] / [RTSP Path]**

The URL address should be the same as the RTSP path in Video Stream (System-->Video Stream)

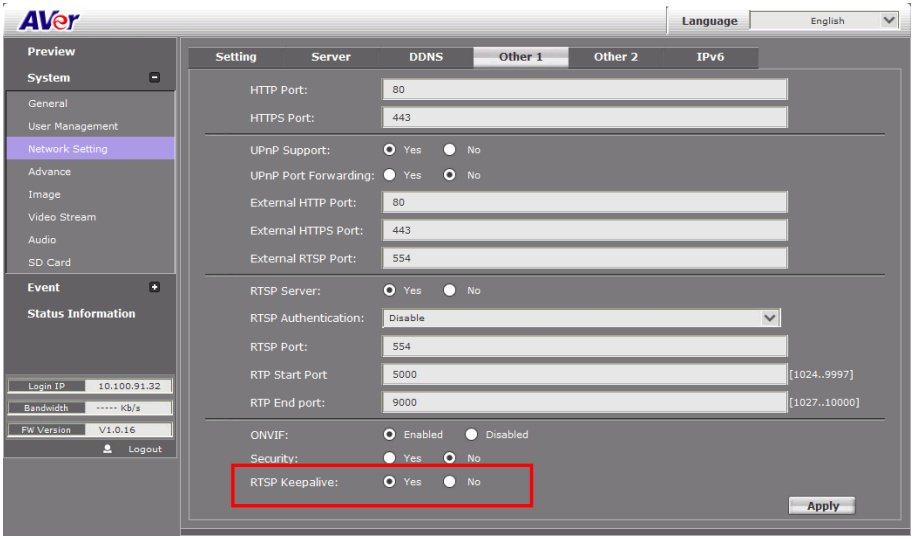


**[Notice]**

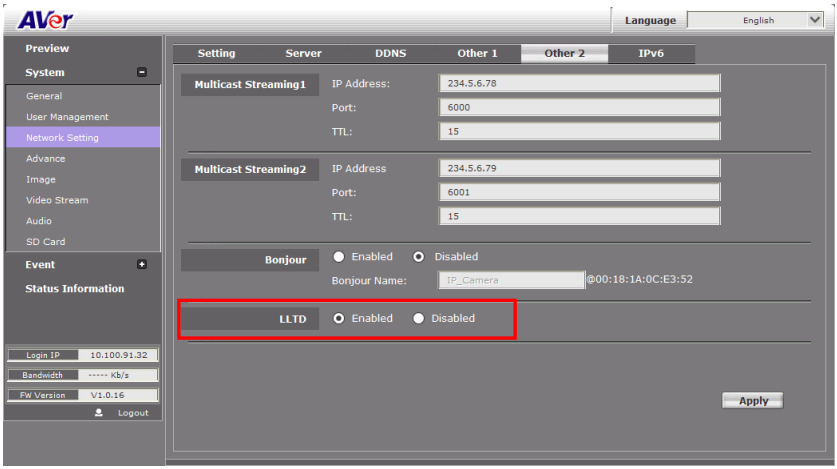
a. If the received image is not from the required IP camera, please adjust the value. (change either IP address or port number)




b. If the Multicast stream you use doesn't support RTSP Keepalive, please select NO.

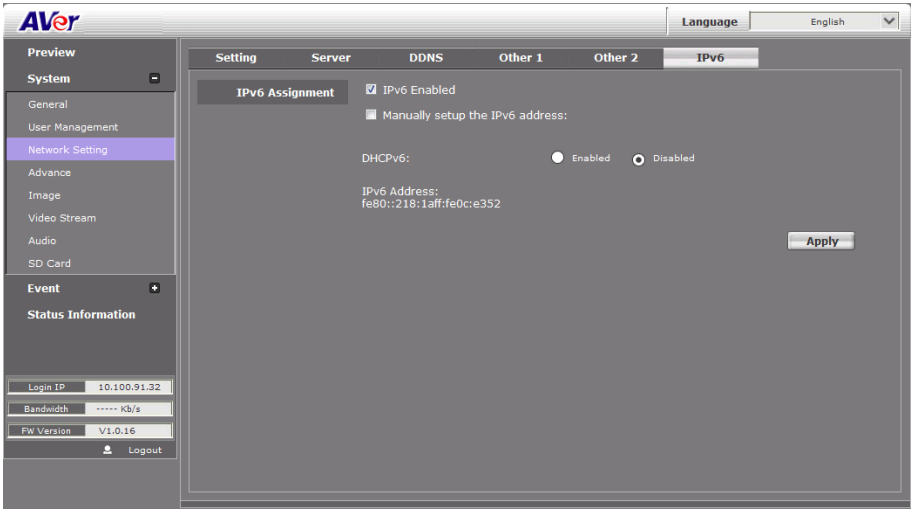


- **Bonjour:** This function enables MAC systems to link to this IP Camera. Please key in the name here.(Safari supports Bonjour protocol)
- **LLTD:** If your PC supports LLTD, enable this function then you can check the connection status, properties, and device position (like IP address) of this IP Camera in the network map. In the computer running Windows Vista or Windows 7, you can find LLTD through the path **Start → Control Panel→ Network and internet→ Network and Sharing Center→** Click " **See full map**".

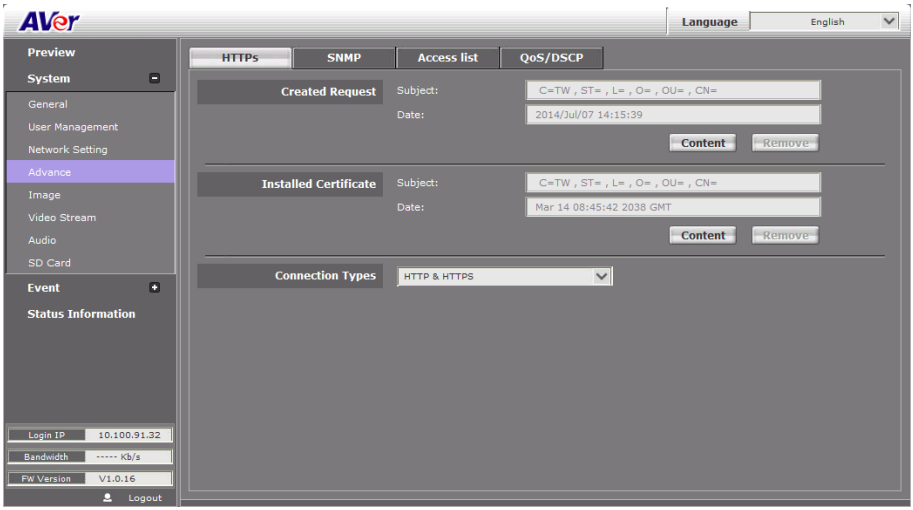



## System > Network Setting > IPv6

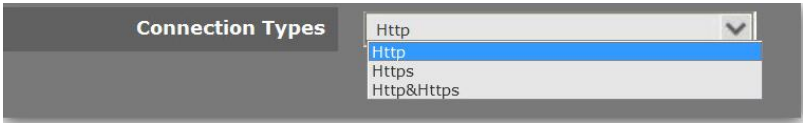
Beside IPv4, there is IPv6 for users to set up IP address.



## System > Advance > HTTPS

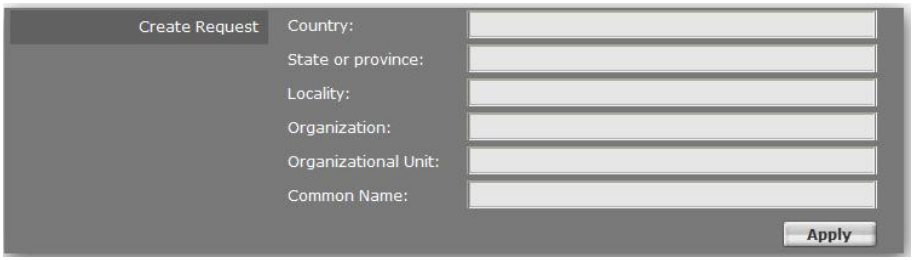



**HTTPS (Hypertext Transfer Protocol Secure):** Https can help protect streaming data transmission over the internal on the higher security level. You can select the connection type. "Https" means user cannot connect the camera via Http protocol. The Https path will be: "https :///( IP address)/". If you select "Http & Https", both the Http and Https path can be used to access the camera




**Remove the existing setting:** Before setting new request, please remove old secure identification. Select "Http" connection type and click "Remove".

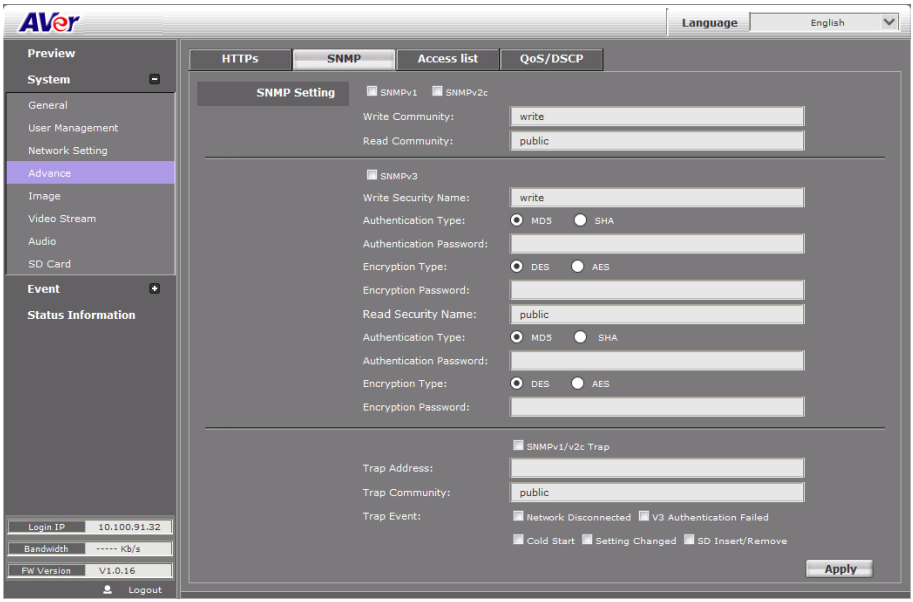
**Created Request:** Setting the secure identification and apply it.




There are two ways to set Certificate- Install Signed Certificate or Create Self-Signed Certificate.

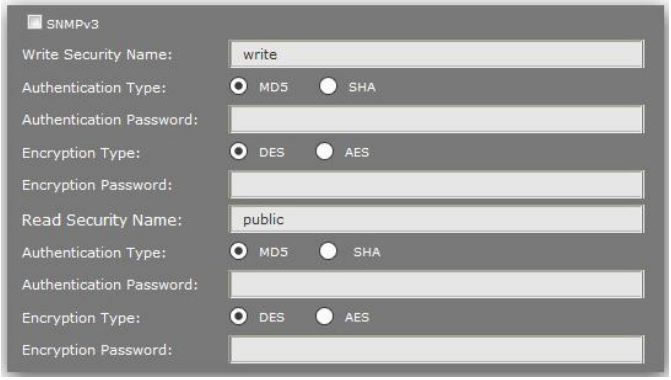
## System > Advance > SNMP

SNMP (Simple Network Management Protocol) provides a simple framework for administering networked hardware. To manage the IP camera, you have to prepare a MIB browser or similar tools first.  SNMPv1, SNMPv2c, and SNMPv3 can be enabled simultaneously.




- **SNMPv1 and SNMPv2:** The term "Community name" in SNMPv1 and SNMPv2c can be roughly regarded as key. The person who has the community name has the authority to read or edit the information of IP camera via SNMP. Check the box to enable SNMPv1 or SNMPv2c protocol, and specify the community name for write (read and write) and read (read-only). The user who uses read community name to access the IP camera cannot modify any data of this camera.

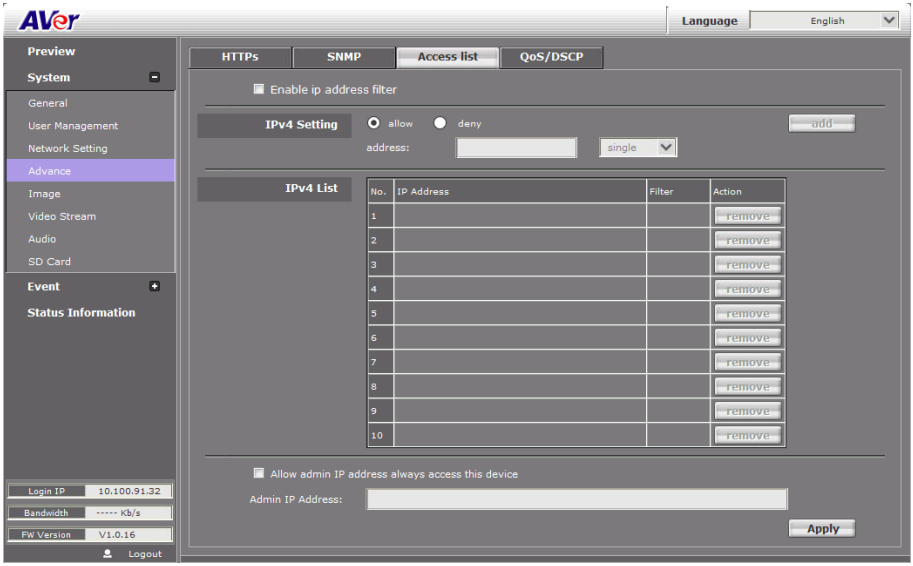
- **SNMPv3:** For data security reason, the authentication and encryption assurances are added when developing SNMPv3. The user has to give not only the security name (the same as "community name" in v1&v2c, or sometimes we call it "context name") but the password in order to access the IP camera. Please set security name, authentication type, authentication password, encryption type, encryption password of write and read respectively. The password must be 8~64 bits in length. Different from in SNMPv1 and v2c, the user have to create a account when using SNMPv3. In the account parameters, key in the security name and password you set in the camera to get accessing.




- **SNMPv1/v2cTrap:** Trap is a mechanism that allows the managed device to send messages to manager instead of waiting passively for polling from the manager. Specify the trap event. When those events happen, the camera will send the ring message to the Trap Address, which is usually the manager's IP address. Trap Community means the community that can receive the trap message.
  - **Cold Start:** The camera starts up or reboots.
  - **Setting Changed:** The SNMP setting is changed.
  - **Network Disconnected:** The network connection was broken down. (The camera will send trap messages after the network being connected again)
- **V3 Authentication Failed:** A SNMPv3 user account tries to get authentication but failed. (due to incorrect password or community)
- **SD Insert / Remove:** A microSD/SDHC card is inserted or removed.

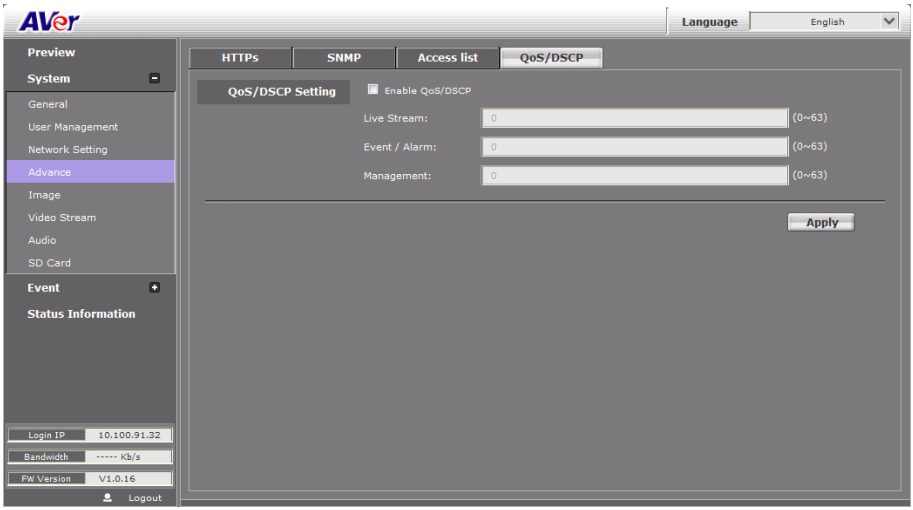
## System > Advance > Access list

You can deny an IP address or a range of IP address so that they cannot access the IP camera. Tick the "enable" box, key in the IP address you want to deny, select "deny" then click "Add" to add it to the list. You can also choose to deny a range of IP address but allow one or several IP address of them. Take the picture above for example, IP address 192.168.50.151~161 is not allowed to connect to the camera, but only 192.168.50.159 can access. Note: In the list "allow" condition must be ranked before "deny" condition. For example, if we exchange the sequence, set "Deny: 192.168.50.151 ~ 192.168.50.161" for the first item and "Allow: 192.168.50.159" for the second item in the list, the IP "192.168.50.159" turns out to be denied by the camera because the "deny" condition has the priority according to our ranking way.



## System > Advance > QoS/DSCP

**QoS/DSCP** (Quality of Server/Differentiated Services Code-point) specifies a simple mechanism for classifying and managing network traffic and provides QoS on IP networks. DSCP is a 6-bit in the IP header for packet classification purpose. The number 0~63 for Live Stream, Event / Alarm, and Management represent the ratio that the bandwidth is divided. For example, if you set 5, 10, and 20 for the three items, then the bandwidth of the three item is 5:10:20. There is no difference between setting "0, 0, 0" or "63, 63, 63" because under these two setting the three items will get equal bandwidth (1/3).

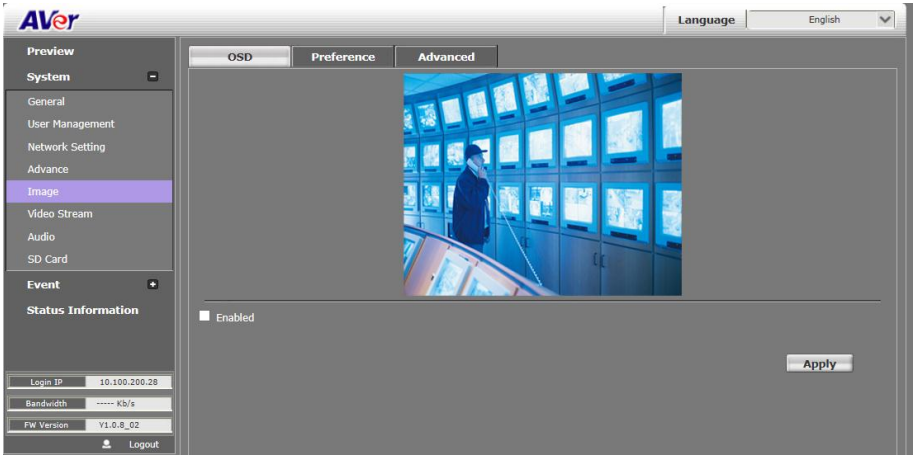


## System > Image

Admin and operator levels can adjust the Image setting. They are: OSD, Preference, Advanced.

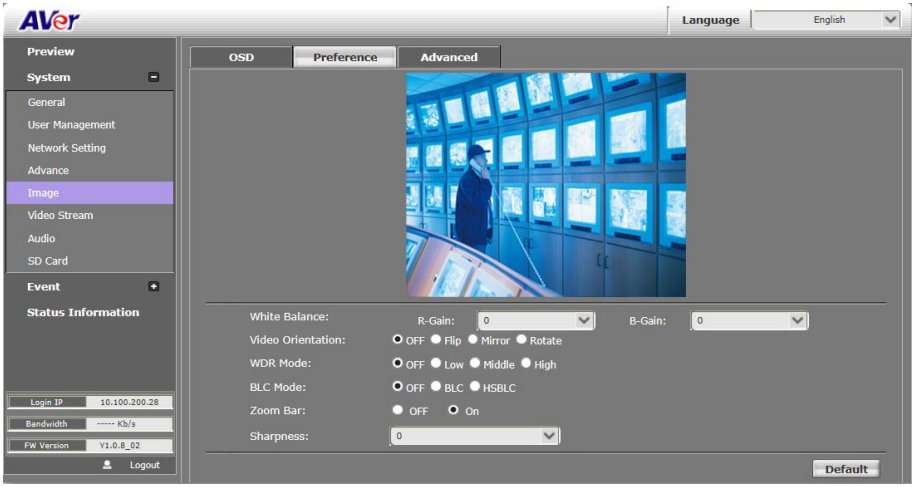
## System > Image> OSD

In OSD tab, you can enable/disable overlaying time stamp**.**
Check “**Enable”** box to display date and time stamp on video screen.



## System > Image > Preference

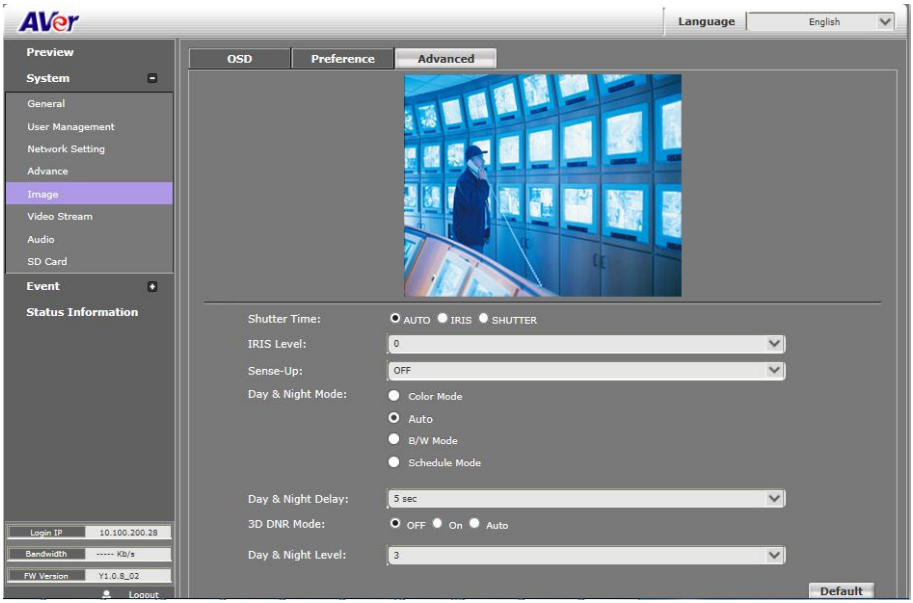
In Preference tab, you can tune the IP camera white balance, change the video orientation, and adjust the brightness and contrast.




- **White Balance:** Adjust white balance value.
- **Video Orientation:** To **Flip** or **Mirror** the video on screen.
- **D-WDR:** This function is able to reduce the contrast in the view to avoid the dark zones resulting from over and under exposure.
- **BLC mode:** Back light compensation. This function is used to make the dark zone resulting from back light lighter and clearer. HSBLC allows the other objects in the view to be free from the effect of strong light. The higher HSBLC level you select, the darker the blanked zone becomes
- **Zoom Bar:** Select "On" to show the zoom bar on the live view.
- **Sharpness**: Adjust it to get clear video.

## System > Image> Advanced

Click **Default** button will back to factory default setting.



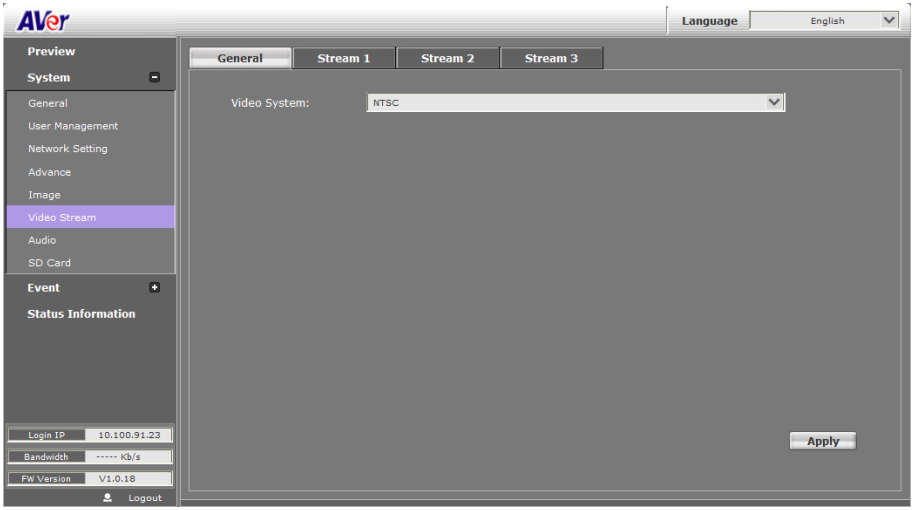

- **Shutter Time:** Adjust the shutter time level to get the best image quality.
  - **Auto:** Both the iris and shutter are adjusted by the camera automatically.
  - **IRIS:** You can adjust the aperture open or closed. The smaller the "F" value you select, the larger the aperture opens and the brighter the image becomes. The shutter time is adjusted by the camera automatically.
  - **Shutter time:** You can adjust the shutter time. The shorter the shutter time you select, the darker the image becomes. The iris is adjusted by the camera automatically
- **IRIS Level:** The higher the Iris level you select the more light the camera gets and the image becomes brighter. However, it will not affect the true iris opening or closing that you select in auto electronic shutter options.
- **Sense-UP:** The main purpose of sense-up is to provide a camera technology that does not rely on artificial light to see in very low light conditions. The shutter stays open longer, allowing more light into the camera and seeing better in low light. When there is a moving object in the image and the faster the object moves, the worse the image appears (blurriness). When you enable sense-up option, users are not allowed to adjust the shutter time manually in "Auto Electronic Shutter" option.

- **Day & Night Mode:** The camera can detect the light level of environment. If you select "Auto", the image will be turned to black and white at night in order to keep clear. Under "Times Mode" the switch time of Color / Black and White is according to the given time. You can also control it by choosing "Color" or "B/W".
- **Day & Night Delay:** D/N delay is used for preventing the light sensor from disturbs of foreign matter. For example, a passing-by car light directly shoots on the camera at night. If D/N delay is not enabled, the image will be switched to color mode when the car light passes, and switched back to B/W immediately after the car left. That will cause the instability of image quality.
- **3D DNR Mode**: Digital noise reduction. This function is able to filter the noise and blur from the image and show a clearer view. 3D de-noise analyzes successive pictures to detect the noise places. You can select three levels by manual or auto DNR

**[Note]** When you select a number in "Shutter Time", actually the shutter time varies in a range and controlled by camera automatically.

## System > Video Stream > General

- **Video System:** PAL or NTSC.

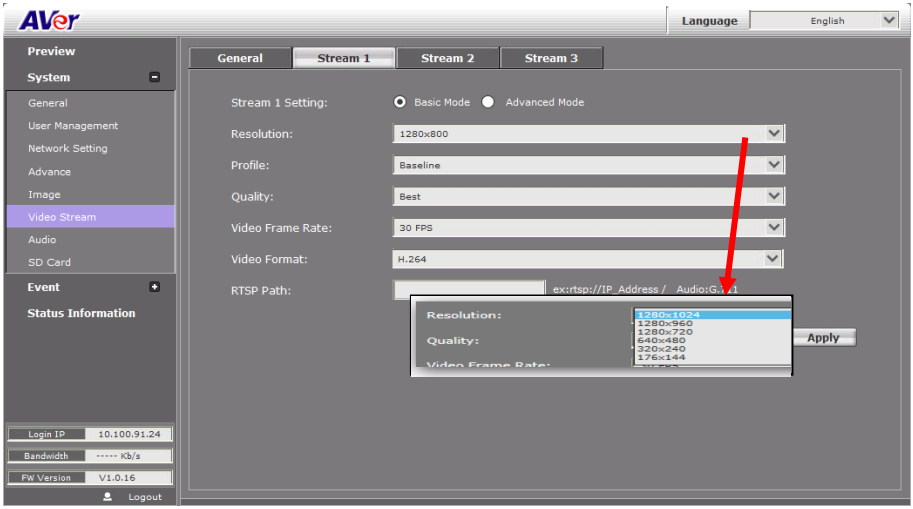


## System > Video Stream > Stream1

- **Basic Mode**

  Click **Apply** to save the configuration.

  - **Resolution:** There are 6 resolutions can be chosen –1280x1024, 1280x960, 1280x720, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Quality:** There are 5 levels to adjust – Best, High, Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for internet transmitting.
  - **Video Frame Rate:** The video refreshing rate per second.
  - **Video Format:** H.264, MPEG4 or JPEG.
  - **RTSP Path:** It's a URL address.

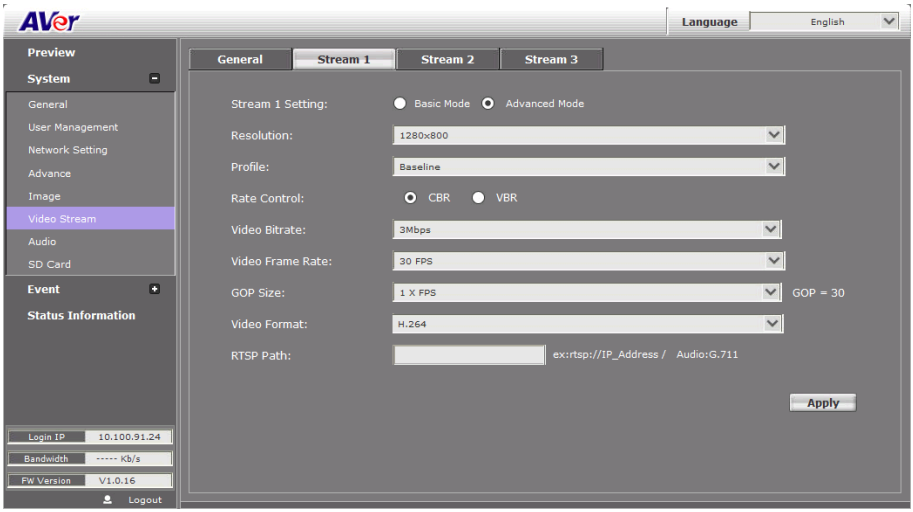



- **Advanced Mode**

  Click **Apply** to save the configuration.

  - **Resolution:** There are 6 resolutions can be chosen –1280x1024, 1280x960, 1280x720, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Rate Control:** There are CBR (Constant Bit Rate) and VBR (Variable Bit Rate) to use.
    - ✓ **CBR:** 32Kbps~8Mbps (the higher the CBR is, the better the video quality is).
    - ✓ **VBR:** 1(Low) ~10(High) – Compression rate, the higher the compression rate, the better the picture quality is; vise versa. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.

- **Video Bitrate:** 32Kbps~1Mbps (the higher the Video Bitrate is, the better the video quality is).
- **Video Frame Rate:** The video refreshing rate per second.
- **GOP Size:** It means "**Group of Pictures**".
- **Video Format:** H.264, MPEG4 or JPEG
- **RTSP Path:** It's a URL address

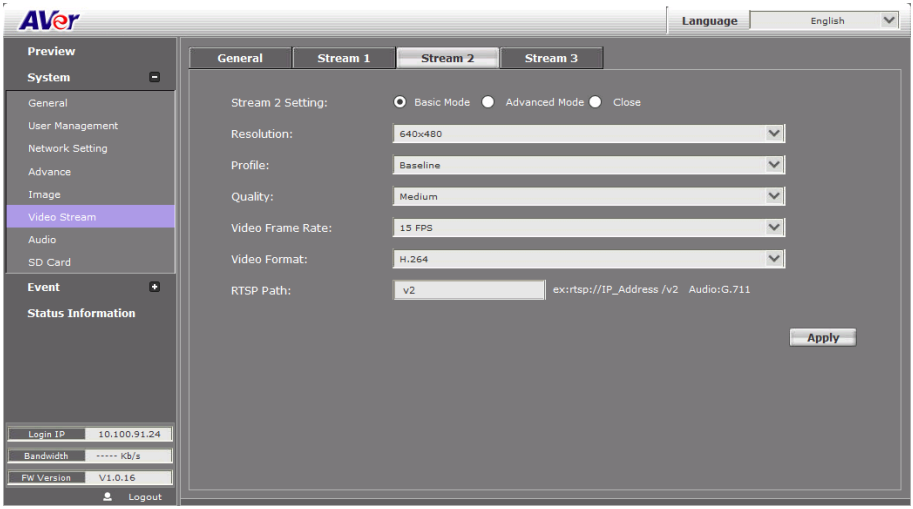


## System > Video Stream > Stream2

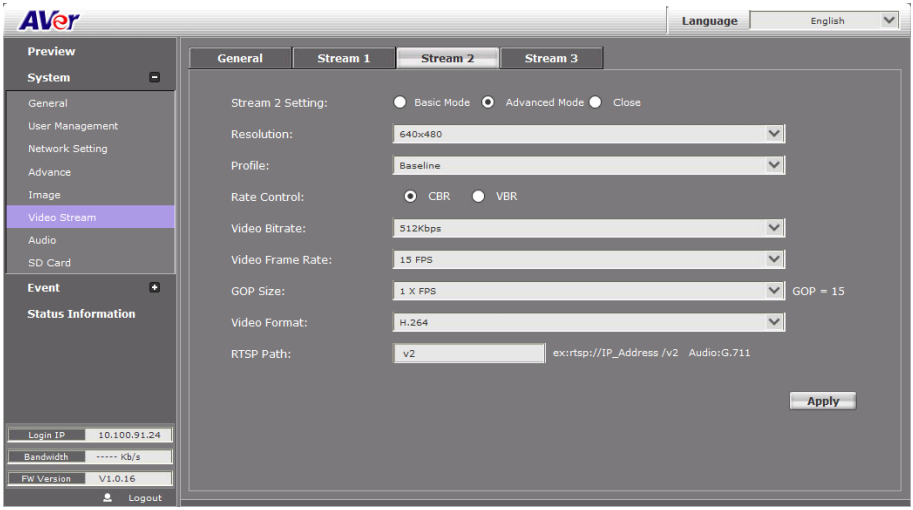
- **Basic Mode**

  Click **Apply** to save the configuration.

  - **Resolution:** There are 6 resolutions can be chosen –1280x1024, 1280x960, 1280x720, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Quality:** There are 5 levels to adjust – Best, High. Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for internet transmitting
  - **Video Frame Rate:** The video refreshing rate per second.
  - **Video Format:** H.264, MPEG4 or JPEG
  - **RTSP Path:** It's a URL address



- **Advanced Mode**
  - **Resolution:** There are 6 resolutions can be chosen –1280x1024, 1280x960, 1280x720, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Rate Control:** There are CBR (Constant Bit Rate) and VBR (Variable Bit Rate) to use.
    - ✓ **CBR:** 32Kbps~8Mbps (the higher the CBR is, the better the video quality is).
    - ✓ **VBR:** 1 (Low) ~10 (High) – Compression rate, the higher the compression rate, the better the picture quality is; vise versa. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.
  - **Video Bitrate:** The quality parameter of CBR. You can choose 32kbps~8Mkbps. The higher the value is, the higher the image quality is. **You are not able to adjust it when choosing VBR**.
  - **Video Frame Rate:** The video refreshing rate per second..
  - **GOP Size:** It means "**Group of Pictures**".
  - **Video Format:** H.264, MPEG4 or JPEG
  - **RTSP Path:** It's a URL address

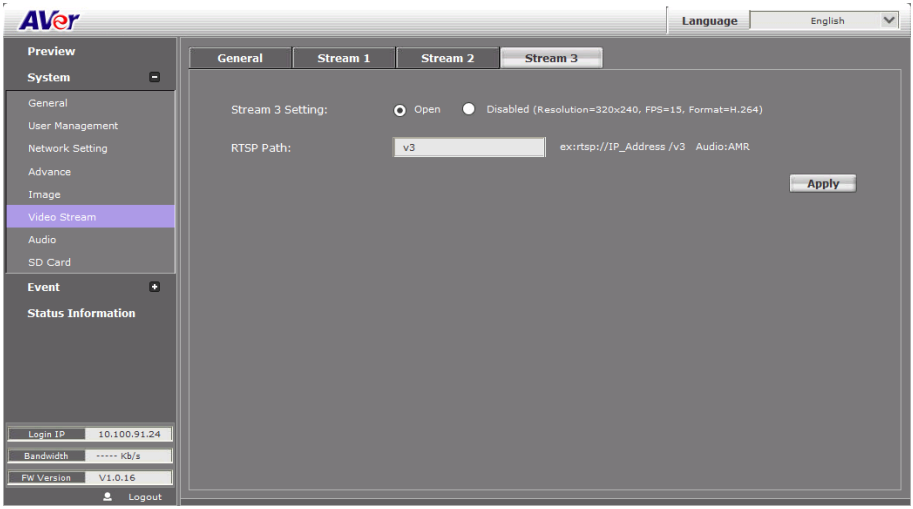



- **Close:** To close the stream 2. Click **Apply** to save the configuration.

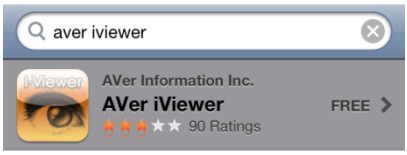
## System > Video Stream > Stream3

3GPP Streaming is designed for mobile viewing.

- **Stream 3 Setting: Enable** or **Disable** 3GPP Streaming.
- **RTSP Path:** It's a URL address.

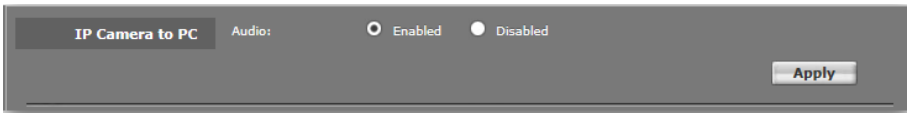



**[Note]** To get the best mobile viewing quality, please download AVer iViewer or Android iViewer from the Apple App store or Google Play. iViewer takes video from Stream 1 or Stream 2, not from 3GPP streaming.



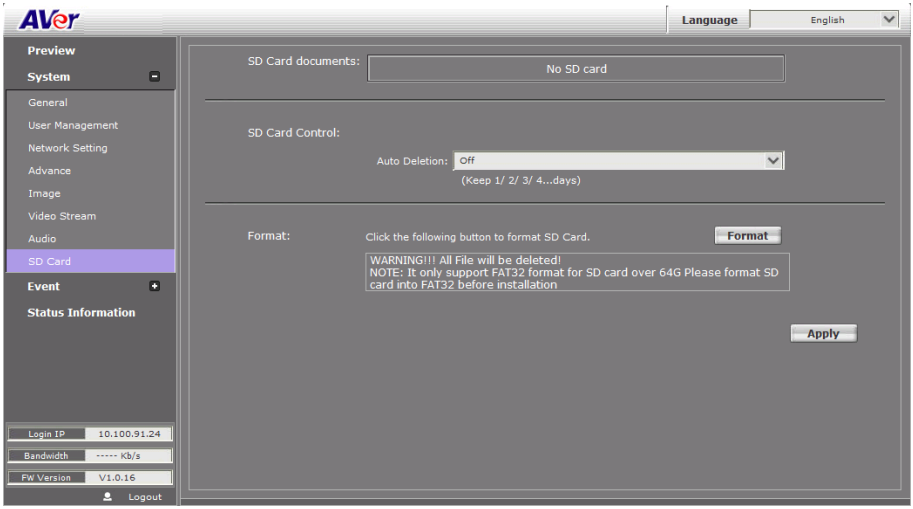
## System > Audio

IP camera supports 2-way audio (mono). User can send audio from IP camera by external microphone to remote site; User can also send audio from remote PC site to IP camera's external speaker.

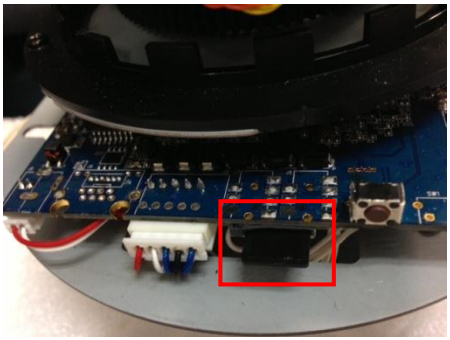



1. IP camera to PC: select "**Enable**" to start this function.
2. In live video screen, click button to start chatting. Press again to mute. Click button to turn on or off the speaker of PC.
3. If "**Chatting**" and "**Save to SD card**" are enabled at the same time, the sound quality might be affected.

## System > SD Card




Please insert microSD/SDHC card before use it. Make sure pushing microSD/SDHC card into the slot completely.

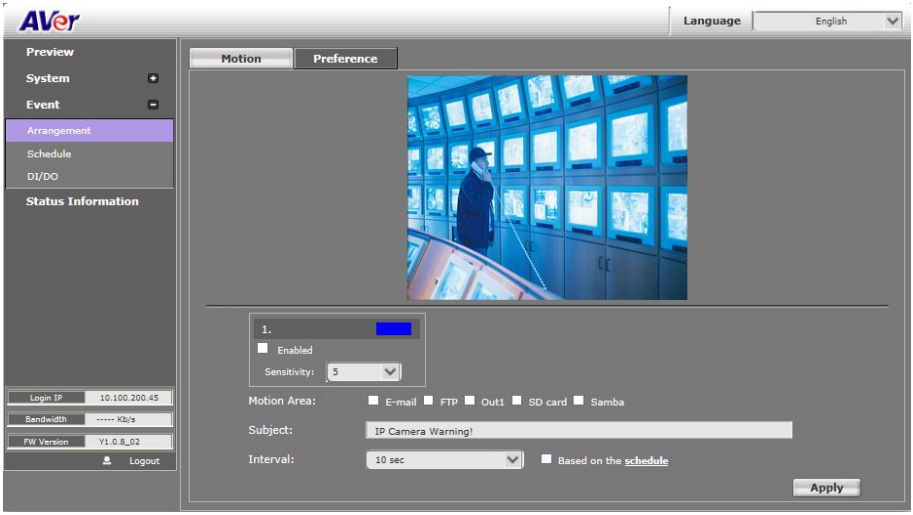


## Event > Arrangement > Motion

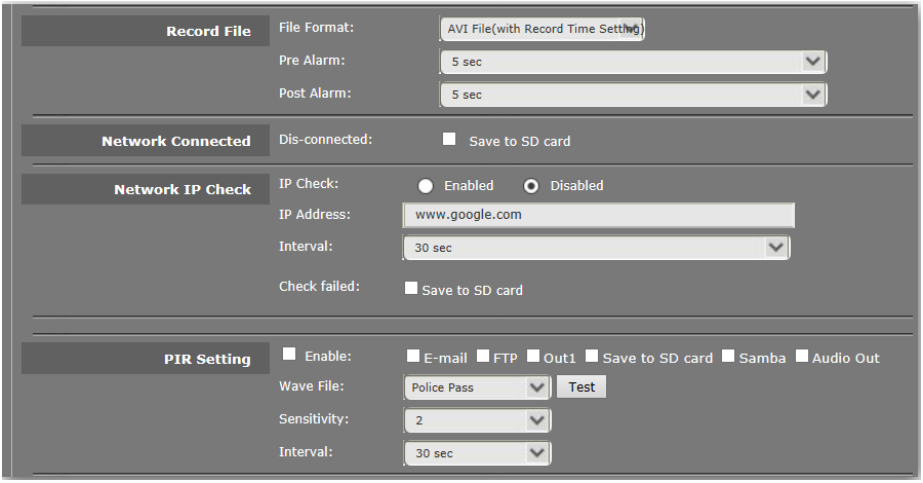
**Motion Detection:** IP camera only allows whole area motion detection. When motion is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local microSD/SDHC card. To start the motion detection, please check “Enable”.

**Interval:** It’s the period between two motion detections. For example, if you select "10 sec" here, once the motion is detected and action is triggered, it cannot be triggered again within 10 seconds.

**Based on the schedule:** The motion detection is enabled only during the schedule time the. That is, for example, 11:00~12:00 of Monday has not been colored in the schedule table, then no action will be triggered even the camera detects motion during 11:00~12:00 on Monday.



## Event > Arrangement > Preference




- **Record File:**
  - **File Format:** IP camera allows 3 different types of recording file to change its record size. When motion/alarm is triggered, there are 3 different types of record mode.
    - AVI File (With Record File Setting )
    - JPEG Files (With Record File Setting), only with MJPEG compression format.
    - Single JPEG (Single File with Interval Setting) (JPEG photo).
  - **Pre Alarm and Post Alarm:** Setups for video start and end time when motion detected, I/O, or other devices got triggered.

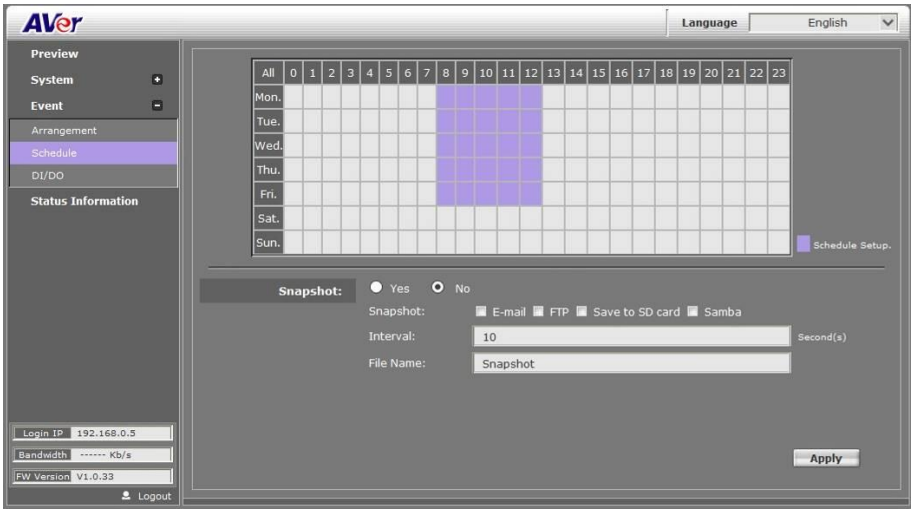
  **[Note]** Pre/Post Alarm record time is based on record time setting and IP camera built-in RAM memory. When information is too much or video quality set too high, it will cause recording frame drop or decrease on post alarm recording time.
- **Network Connected:** When the network is down, it will save the video to local micro SD/SDHC card.

**[Note]**This function is only enabled in wire connection.

- **Network IP check:** When the connection is down, it records the **video** to micro SD/SDHC card. Make sure the video recording is continuous. To use this function, key in the IP address of the PC which has recording software installed. Enable the function of "**Save to SD card**", then click "**Apply**".

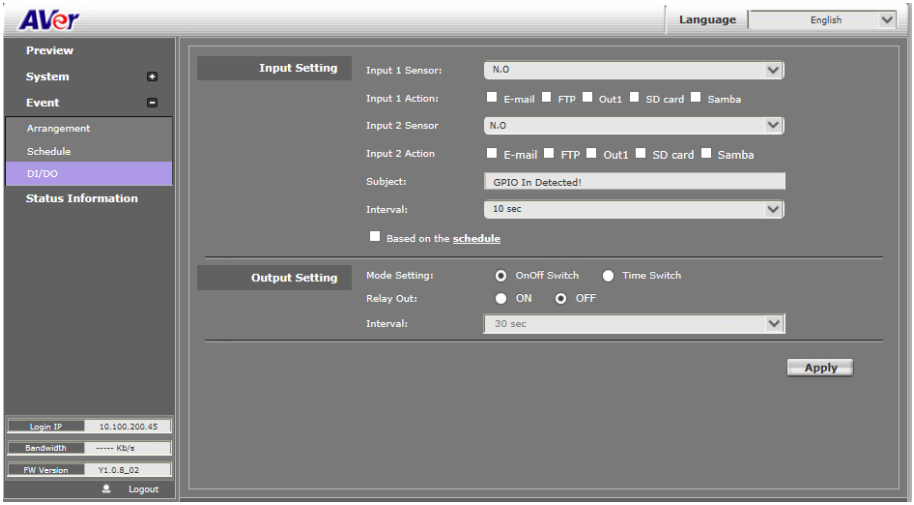
## Event > Schedule

- **Schedule:** After complete the schedule setup, the camera data will be recorded according to the schedule setup.
- **Snapshot:** After enable the snapshot function, user can select the storage position of snapshot file, the **Interval time** of snapshot and the reserved **File Name** of snapshot.



## Event > DI/DO

SD1306 supports 2 digital input/1 digital output. When input is triggered, it can trigger the relay and send the video to some specific mail addresses, transmit the video to remote ftp server and save video to local microSD/SDHC card.




**CAUTION!!**

Please connect to propriety relay box to reduce the risk of electric shock & damaged.

**Input Setting:**

- ✓ **Input 1 or 2 sensor:** This is to set the relay status while sensor is not yet triggered.
- ✓ **Input 1 action**: Send the triggered video clips or photos to the selected method.
- ✓ **Subject:** This is the subject while sending files via e-mail.

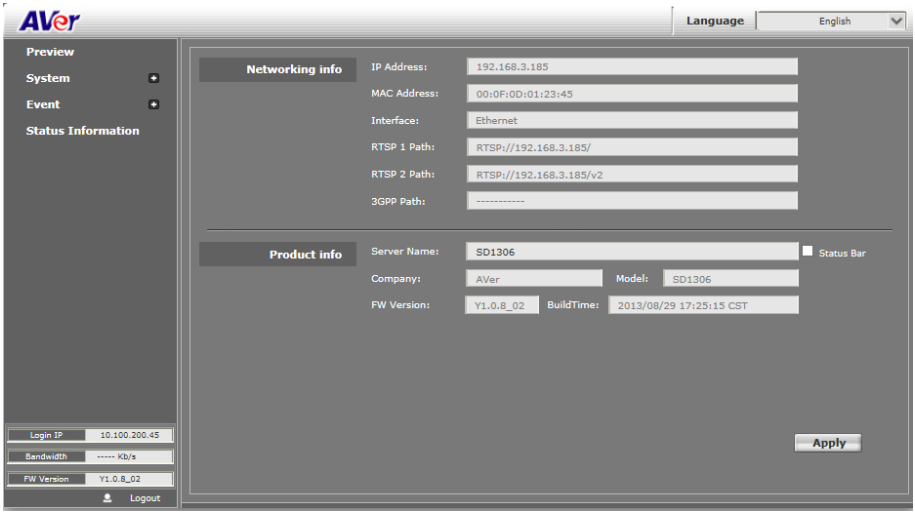
- **Interval:** For example, if you select "10 sec" here, once the motion is detected and action is triggered, it cannot be triggered again within 10 seconds.
- **Based on the schedule:** The motion detection is enabled only during the schedule time the. That is, **for** example, 11:00~12:00 on Monday has not been colored in the schedule table, then no action will be triggered even the camera detects motion during 11:00~12:00 on Monday.

**Output Setting:**

- ✓ **Mode setting:** The output mode affects the DO or relay out duration.
- ✓ **On/off Switch:** Relay status is based on sensor triggered times.
- ✓ **Time Switch:** To restore the original relay status after the interval time.
- ✓ **Relay out:** You can manually stop it at this page or at the preview page.

## Status Information

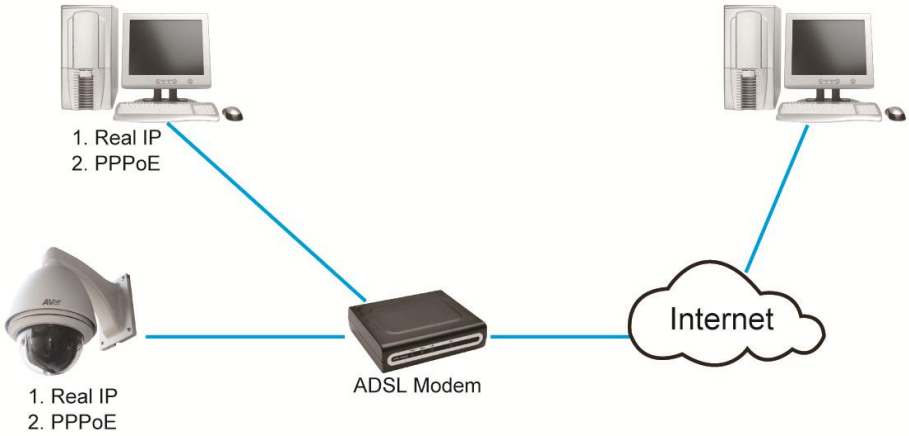
Click **Apply** button to save the configuration.




- **Networking Info:** Displays network information of the IP camera.
- **Product Info**
  - **Server Name:** Assign a name to the IP camera and the name shows on the IP Installer. Also, display the related information of the IP camera. Mark **Status Bar** to display the Server Name of IP camera on preview interface.

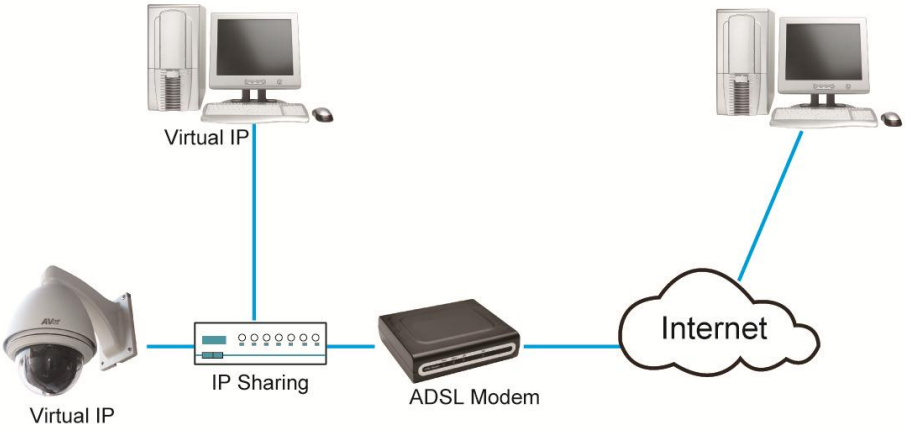
# Network Configuration

■ **Configuration 1**




a. Internet Access: ADSL or Cable Modem
b. IP address: More than one real IP
c. IP camera and PC connect to the internet
d. For fixed real IP, set up the IP into IP camera and PC. For dynamic IP, start PPPoE.

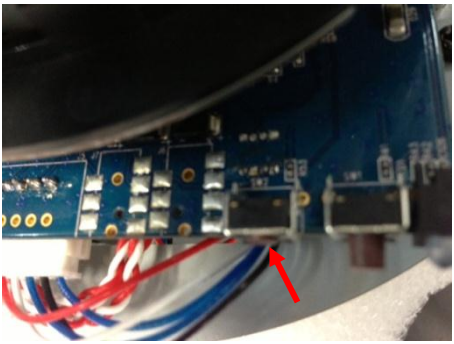
■ **Configuration 2**




a. Internet Access: ADSL or Cable Modem
b. IP address: one real IP
c. IP camera and PC connect to the internet
d. Device needed: IP sharing
e. Use virtual IP, set up port forwarding in IP sharing.(Please refer to Network Setting → Other 1 → UPnP Port Forwarding)

# Factory Default

1. To recover the default IP address and password, please follow the following steps.
2. Remove power and Ethernet cable.
3. Press and hold the button and connect power and Ethernet cable to the camera again and hold for round 20 seconds for system booting.
4. Release the button when camera finishes proceed.
5. Re-login the camera using the default IP (http://192.168.1.168) or DHCP, and user name (admin), password (admin).



# Troubleshooting

Here are some useful tips on how to solve some common problems.

| Problem | Solution |
| --- | --- |
| I forgot the account and password for SD1306. How can I go back to default setting? | Please refer to the manual of “Factory Default setting” description. |
| I recorded video file in H.264 file format but failed to playback on Media Player. | Default Windows Media Player doesn’t have H.264 decoder so that you can’t playback the file successfully. Please install K-Lite program in advance or install KMPlayer or VLC program to playback the video file. You can search those free programs on Internet. |
| When I use Chinese words as the Gmail title while motion triggered, it turns to be nonsense characters displayed on my Gmail. | It’s the spec limitation and please only use English or numbers as mail title to avoid this phenomenon. |

# Appendix

SD1306 is compliant with microSD/SDHC card and to ensure recording quality, and please use memory cards over 2G and Class 4 above (Max. 32G)

| MicroSD/SDHC card |
|---|
| Transcend SDHC class4 16GB |
| Transcend SD class4 16GB |
| Transcend SDHC class4 32GB |
| Transcend SD class4 32GB |
| Transcend SD class6 4GB |
| Transcend SDHC class6 4GB |
| Transcend SD class6 8GB |
| Transcend SDHC class6 8GB |
| Transcend SD class6 16GB |
| Transcend SDHC class6 16GB |
| Transcend SDHC class10 4GB |
| Transcend SDHC class10 8GB |
| Transcend SDHC class10 16GB |
| SanDisk SDHC class4 4GB |
| SanDisk SDHC class4 8GB |
| SanDisk SDHC class4 16GB |
| SanDisk SDHC class4 32GB |

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